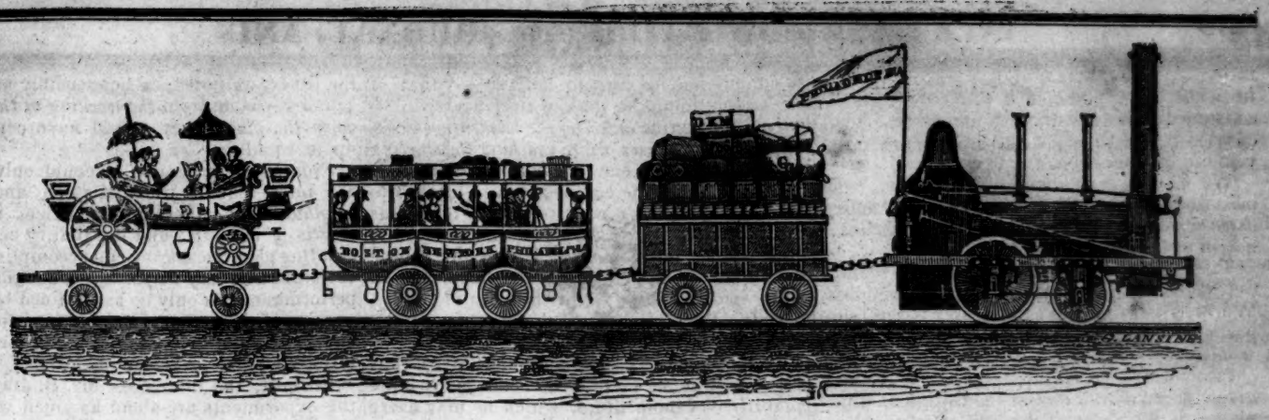


# AMERICAN RAILROAD JOURNAL,
## AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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## AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MARCH 8, 1834.

☞ The Editor of the Railroad Journal regrets that circumstances render it necessary for him to take leave of those who have encouraged him in his course by *subscribing* to the Journal, but have *discouraged* him from its continuance by omitting to pay for it. If it is *worth* reading, it is certainly worth $3 a year—at least it costs him so near that amount, that he cannot afford to print many more than are promptly paid for, and therefore it will be discontinued after *this* number, where the *subscription for last year is still unpaid.* To those who have paid for the previous, but are in arrear for the current year, the editor will merely observe, that to them, or to him, *three* dollars alone is of little consequence; but when they consider that *his* business is entirely made up of such sums, and that there are many hundred such amounts yet due for the Journal, he trusts that each one will remit his subscription without delay; and do it also in a *U. S. Bank* note, if possible, as all others, except a few in this city and immediate vicinity, are at a *heavy* discount. Any subscriber, remitting a $5 U. S. note, for the *current* and ensuing year, may do so without paying postage, and he will have credit for its full amount.

Those who have paid in advance for the current year, he begs leave to tender his thanks for having thus expressed their approbation of the utility of such a work, and trusts that they may derive ample remuneration from its columns for their liberality.

☞ Having determined to send *only* to those who deem it worth paying for in advance, yet being unwilling to be deemed uncourteous to those who may not have had leisure or opportunity to attend to so small a matter, the Journal will be sent to all, as at present, *until the 1st of April*, that every subscriber may have ample time to remit. After that date it will not be sent, unless the subscription shall have been paid.

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From the Montreal Gazette we extract the following:

Norman Bethune, Esq. of this city has obtained letters patent for a new improved principle for building steam-vessels. Of course we are unaware of the exact nature of Mr. Bethune's improvement, but he has stated to us that ever since the completion of the Manchester and Liverpool railroad, his mind had occasionally been engaged in devising some improvement in the speed of steam-vessels, but that owing to his avocations he had not leisure to give much attention to the subject. He had thought of the buoyancy of the cask, but did not discover the application of it until he read a description of Mr. Burden's new boat, which seemed to promise what he had been in search of. But upon carefully examining it, he discovered a great deficiency in safety to the passengers and cargo, in the event of an accident happening to one of the tubes, by striking a piece of floating timber or ice, end on, while under full impetus, which would cause that side to fill almost instantaneously, and the weight on deck would sink it in a few minutes to the bottom; but where the depth of water should be greater than the breadth of her deck, she would fall over on her back. To obviate such a risk has for the last four months been his study, and he has, in his opinion, happily arrived at a complete safeguard against such an accident; and in attaining that desirable end, his boat naturally acquires greater buoyancy, and of course greater speed. Mr. Bethune feels perfectly satisfied that a vessel built on his plan will make the passage to Quebec in eight hours, and return in ten, stoppages included. Should his views prove correct, two boats, built upon the new plan, would form a daily line, and starting at six o'clock in the morning from both places, the Montreal boat would land her passengers at Quebec at two o'clock, and the Quebec boat hers at Montreal at four o'clock in the afternoon, (taking the tide as it might happen to be,) and always in day-light.

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*Navigation of Lake Ontario.*—The first vessel which plied the present season between York and Niagara, left the former port on the 20th of February—much earlier than in former years.

*On Undulating Railways.* By A CIVIL ENGINEER. [For the American Railroad Journal.]

SIR,—Soon after the perusal of the experiments made by Mr. Badnall on the Liverpool and Manchester Railroad, I drew up the following strictures upon them, which I send for publication, if you should think that they will contribute to the objects of your Journal.

A CIVIL ENGINEER.

MR. EDITOR,—You must pardon me—my patience is exhausted—I can no longer silently look on and see your respectable and useful paper countenancing an absurdity which nothing but the blindest species of infatuation (that of an inventor for his favorite project) can support after a moment's serious reflection, aided by a knowledge of the laws of nature. But I must pause—perhaps you have thought, from my abrupt beginning, that I was about to attack another Cataline: you are mistaken—I allude to Mr. Badnall's "undulating railway," and *especially to his late experiments on the Liverpool road*, which, it would seem, were seriously witnessed by Mr. Stephenson, the Engineer of that great work.

After reciting the experiments, the conclusions drawn from them are,—"That a locomotive engine can not only convey, on an *undulating way*, *double the load* which it is capable of conveying at *the same velocity* on a *level line*, but that it can accomplish this by the employment of *half its power*." [See page 789, last vol.]

That Mr. Badnall should persuade himself of the truth of this most unphilosophical conclusion, is not a matter of much wonder; but that Mr. Stephenson, who is an eminent engineer, a man on whom the epithet 'great' has, on some occasions, been conferred, should sanction it, is to me a cause no less of surprise than regret.

I have declared his conclusions erroneous; it remains to sustain my position. With this view the following observations are premised:

It is a law of gravitation, that, if a body fall freely from a certain height to the earth, its velocity is *accelerated* at each instant of time during its fall: that, *cæteris paribus*, if the same body be projected upwards with the final velocity it had acquired by its fall, it will rise to the same height from which it fell, and in the same time, before its momentum will be destroyed by the same force which generated it, in its downward course.

Bodies moving on inclined planes follow the same general immutable law,—i. e., if a body be projected up an inclination with a certain initial velocity, it will advance up the plane until its momentum is exhausted by its gravi-

tating tendency, when, if left free, it will return down the plane in a time equal to that consumed in its ascent, and at the end of its course will have acquired precisely the initial velocity of projection.

We hence perceive *that no more power or momentum can be generated by a body in falling down a plane than will carry it up an equal inclination in length and degree.*

These preliminaries made, we may remark that the first six experiments are of one class. We will abridge the 1st, 2d, and 7th, 8th experiments, which contain the substance of the whole set.

1st. "*Two* engines brought the train to a given point at the foot of the Sutton inclined plane, at which point they had attained a velocity of 19 miles per hour. One engine then left the train, and the other ascended with the load 575 yards in 116 seconds."

2d. "The power of the engine being reversed, the engine and load descended 575 yards in 84 seconds; the velocity attained at the foot of the plane being *far greater* than at the same point when *ascending*."

7th. "The two engines attained a velocity of 18 miles per hour at the foot of the ascent; one engine then left the train, and the other shut off her steam, when the whole train rose, by *momentum only*, 332 yards in 70 seconds."

8th. "The train descended (the engine working) 332 yards in 66 seconds."

In the first set of experiments there is an apparent inconsistency with the law of dynamics above given: that this is only specious, and not real, as Mr. B.'s fancy has led him to imagine, the latter set clearly prove, as I shall endeavor to show in what follows:

The rules of philosophizing seem to have been wholly lost sight of; for, instead of the inference the sanguine Mr. B. draws from 7 and 8, viz., that it can convey double the load, *with half its power*, they prove the fallacy of the preceding—at least, of the inference Mr. B. draws from them; and show a remarkable coincidence with the laws above laid down. In short, these experiments, coinciding as they do with the known laws of falling bodies, ought to have suggested that, there not being a coincidence among all, there existed some defect, mismanagement, or other *adequate cause*, for the apparent disagreement of the first set with known laws: instead, these laws we find virtually pronounced incorrect; because, certainly not that his experiments actually prove them so—for any man reasoning *a priori*, from these laws, would have arrived at results similar to those which the experiments develope—but because, forsooth, it would seem they are *strange* (to him), and perhaps because they would not otherwise account for the preconceived principle of the undulating railway!

The poet may dwell upon the beauties of the visible world, and exclaim with rapture peculiarly his own,

"'Tis distance lends enchantment to the view."

Not so the philosopher. At the distance of 3000 miles he may throw his intellectual ken across the Atlantic, and pierce the dark atmosphere of an inventor's prejudices in the pursuit of truth. Should the *inferences* drawn from these experiments (the facts are not contested) be true, there would indeed be a revolution, not only in railroads, but in the planetary roads; and possibly render it necessary to remodel those laws which have so long and so well answered the purpose of guiding the planets in their courses!—laws which, we are fain to believe, most of the world would be unwilling to dispense with, even for the bonus Mr. B.'s undulating railway system can confer upon them.

We think that the first of these philosopher's *stones*, of which Mr. B. claims to be the happy discoverer, will be reduced to its original *brass*, by the consideration that the train was projected up the plane by the *momentum* generated by *two* engines, and was assisted in its further progress by one. The *power* then is not as Mr. B.'s fancy has led him to imagine,—"that of one engine doing the work of two on a level,"—but of *one engine aided by the momentum generated by two engines before reaching the starting point*—a power as efficient and active, while it lasts, as that of the engine actually hitched to the train—a power which a form of words cannot annihilate. Had the train advanced to the starting point aided solely by the engine which was to accompany up the plane, we ask, what would have been the result? Why, plainly, the same as in the last set—equal times—equal velocities.

Unless then we can suppose that Mr. B. has discovered some method of condensing large quantities of momentum, which he may carry in his pocket, and infuse into his train before encountering one of the "bumps" of his "undulating railway system," our humble opinion is, that he will have to amend his first inference by striking out "double the load," and inserting "two-thirds, or one-half of the load," which it is capable of conveying at the same velocity on a level line: which opinion we expect to turn into an indisputable truth in the sequel of this paper.

Again, searching for the cause of the wonder which words have had the power to confer on these experiments—for the reason why, in falling down the plane, the train passes the foot at a *far greater velocity* than at the same point when ascending,—it should be borne in mind that, if the train had proceeded up the plane aided solely by the momentum generated before reaching it, the mass would have advanced until its momentum was exhausted, when, returning, it would have passed the foot of the plane in a time equal to that of its ascent, and at the same speed; adventitious circumstances, such as irregularities of motion, and consequently of friction upon the rails and otherwheres, as well as from the friction of the pistons of the engine, not being taken into account. The rationale of this discrepancy is readily given.

*In addition* to the momentum generated by the *two* engines, the train was assisted by one up the plane: this would operate to carry the train much farther up the plane than if left to its momentum alone; consequently, even if at the turning point this engine had been detached, the gravitating tendency would have caused the train to repass the foot at a far greater speed than it ascended with—since there was a much longer space in which to generate its velocity by the *accelerating* force. Partly from the same cause, and partly for the reason, that, after the momentum ceased to operate in propelling the load, it must have passed over the remaining distance to the turning point at a very slow rate, the time elapsing in the descent must have been much less than that expended in the ascent—offering, surely, nothing strange or unlooked for, one would suppose, by the experimentor; at least, I can vouch for it, by one who was not *alchemizing* for the "principle of the undulating railway." The experiment was actually more favorable to produce this disparity, *since the engine worked down the plane*, which would tend still farther to increase the difference of the times.

I am therefore quite at a loss to perceive the justice of inferring thence, that *because, under these circumstances*, the train *descends more rapidly*, and in a *less time*, over *a given distance*, "that one engine does the work of two on a level." The only inference warranted by the premises is, *that trains, under like circumstances, will always descend more rapidly and in less time than they will advance up a given inclination.* It is only by a computation of the performance of the engines in the experiment, and a comparison with the actual performance on a level, that we can pronounce upon their relative performance or advantage.

The last experiments, 7 and 8, show clearly a coincidence between the time of ascent and descent, when the train is influenced by momentum only in propelling up the plane, since the times, as noted, do not sensibly vary from equality—aside from *the working of the engine down the plane*, they would have come quite up to equality.

From this experiment he could only rationally infer, that the times of ascent and descent of planes under these circumstances is *nearly a ratio of equality:* and not that, "on the undulating plan, one engine can accomplish double the work *with half its power*," since the *relative* performance can only be ascertained by a comparison of the computed *absolute* performances on the plane and on the level. These computations I shall presently submit.

In short, the inferenees Mr. B. draws from the experiments are about as much warranted by the premises as one would be in estimating the value of a quantity of vegetables from the known value of a pound of cheese.

We have seen that the fact of the descent being performed in less time than the ascent in these experiments, under these circumstances, is nothing strange, nothing new, and is consistent with the laws of dynamics; that the last experiment is a direct and plain corroboration of these laws; that the inferences drawn from both sets are incorrect; that, consequently, any superstructure which may be erected upon them is—un chateau en Espagne.

These facts will appear more striking when I shall have answered the question—"What *practical result* may then be inferred from them?"

Submitting the performance of the first to calculation, we shall find that the rate exceeds but little 12 *miles per hour;* but if the engines had been permitted to continue their course on the level, it would have been 19 *miles per hour.* We infer, then, that if a train of cars of the weight, and under the circumstances, of those in the experiment, be brought to the foot of a plane similar to the Sutton plane—if then one engine be detached, while the remainder proceeds up the plane until the gravity of the whole exhausts both the momentum generated by the two engines and the power of the accompanying engine—and at this point the power of the engine be reversed, and the whole return down the plane—that there will *always* be a *loss* by the *use of this method* compared with that of the *two engines working on a level road* in the ratio of 2 : 3, or one-third.

If we submit the performance of the two last to calculation, we shall find a result *below* 10 *miles per hour* for the actual performance. The performance on the level would have been 18 *miles per hour.* We infer then that there is a *loss* in the *use of the principle of* "*the undulating railway,*" under the circumstances of the experiments 7 and 8, in the ratio 10 to 18, or one-half.

As to curvature—shade of Newton!—that matter may be moved in a curved track at a *greater velocity* and *with less power* than in a straight line! is to say that bodies moving in curved paths do not always require an increase of power to propel them in the *direct* ratio of the *squares of the velocities*, and in the *inverse* ratio of the *radius of curvature!*—is to say that the more the curvature is sharpened, the greater the facility with which a body moves therein! (what a rapid flig htwe might make to the moon by a road curving like a succession of S's!)—is to say, that when a single force is resolved into its *components*, that a *part* is greater than the *whole!!*

Did the English Smeatons and Rennies, and the French Pronys, seriously approve of all this? or did they smile and shake their heads?

Albany, December 19, 1838.

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***Further Experiments on the Liverpool and Manchester Railway, to determine the correctness of the Undulating Railway System.***

**[From the London Mechanics' Magazine.]**

SIR,—I have this morning (29th October) received your numbers of the 19th and 26th inst. My principal object in now addressing you is to make an observation or two, which Mr. Cheverton's last communication immedi-

ately demands. In the course of a few days I shall trouble you with more general remarks in answer to "S. Y.'s" objections, to which the contents of your next number may possibly enable me to add something in further reply to Mr. Cheverton.

Mr. Cheverton says, in allusion to the comparative amount of resistance on the two lines, "Mr. Badnall will not undertake the task (of showing how trivial is the difference), because it will *disclose the poverty of his scheme*." In the same breath, also, he observes, that "space will not allow him (Mr. Cheverton,) to show how trivial one is in comparison to the other."

Thus Mr. Cheverton, in a most unwarrantable manner, accuses me of withholding the truth when I have the power of publishing it, which *truth, if exposed*, would (he says) prove the poverty of my scheme; and yet, after nearly a *twelvemonth's* discussion, he, *for want of space*, declines to touch upon this subject. I appeal to all your readers, *is this generous?*

But Mr. Cheverton endeavors to sweeten this bitter observation, by saying, "I cannot believe that there is any intention to deceive, *yet it suits his* (Mr. Badnall's) *purpose better, (though it is not dealing fairly with the public,) to take a very short distance*, such as 147 yards," &c. &c.

*There is no intention of deceiving*, and *yet I am not dealing fairly with the public!!* I trust Mr. Cheverton will have the good feeling to revoke these expressions, or, at least, to explain them; and if not, I trust he will exclude Mr. R. Stephenson, Mr. Dagleish, Mr. Dixon, and the other engineers under whose joint inspection and superintendence most of the experiments were made, from any participation in a wish *to deal unfairly with the public*.

I am not one, Mr. Editor, who feels disposed to quibble about trifles, or, in discussions of this kind, to be disturbed by every burst of anger from an opponent whom, in this instance, *I feel within my grasp;* but I offer my unqualified protest against the right or propriety of any man attributing *unjust motives* to another, without a cause which he is able to substantiate.

Mr. Cheverton's remarks about inertia and gravity are becoming as familiar to me as my "*hic, hæc, hoc.*"

His simile of "the two boys with a swing," would, I should have imagined, (as some time ago alluded to by your correspondent "Saxula,") have led him to reflect rather more deeply on the subject before us. Had I told him, before this discussion was entered upon, that I could, by means of my own arm, and without the aid of any assistant artificial power, raise a ton weight above the level of my head, he would not, perhaps, have believed me; yet he knows very well, that if a ton weight were suspended but a few inches from the earth by a rope of sufficient strength and length, and from a prop of sufficient strength, there could be no difficulty, by gradually increasing the oscillations of the load, in attaining the required elevation,—nay, by the simple application of an equally simple contrivance, to retain the load at that very elevation when attained. Now, although throughout each oscillation of this pendulum, the effect of gravity from each descent of the weight may be said to be destroyed in the corresponding ascent, would the power of gravity, or would it not, be auxiliatory in the accomplishment of this task?

With regard to 147 *yards* being too limited a distance to suit the trial of a fair experiment, Mr. Cheverton must blame the locomotive engine, not me. The inclined plane is 1¼ mile in length, and if the Rocket engine had not sufficient power to reach a higher elevation, was it *my fault*? The experiments which were *last* tried will surely satisfy Mr. Cheverton that he has done me injustice, in supposing that I *chose* the *worst engine*, from any supposition that *it would best support my arguments on this subject.*

As it appears that the deductions which are drawn by engineers from these experiments, are not fully understood by many who have perused the particulars of them, I shall beg your insertion of a diagram, published by the editor of the Manchester Guardian, which will probably be found to render my ideas as clear as they can be rendered on this subject:—

A B is a level line—B C, equal to B D, forming an undulation D B C, whose summits are of equal altitude.

The train of loaded carriages, weighing 150 tons, and moved by two engines, one dragging, the other propelling the load, had acquired from A to B (the length of this line being one mile on the railway,) a velocity of 20.28 miles an hour. On arriving at B the steam of the propelling engine was shut off, and the engine stopped. The train, then, partly by the momentum acquired in travelling over the level railway, and partly by the power of the remaining engine, ascended the inclined plane to the point C, viz. 575 yards, which was as far as the united locomotive force of one engine and the momentum could carry it. The power was then reversed, and the engine pushed the carriages back from C down the inclined plane to B, at which point it was found that the descending velocity was 31.70 miles an hour. Now, as the velocity of 20.28 miles an hour at B was sufficient, with the aid of *one engine*, to carry the whole train from B to C, what man living will dispute that a velocity of 31.70 miles an hour, at the same point, would, with the same engine, have enabled the train to ascend the line B D, which is supposed to be precisely equal to the line B C? On the contrary, would there not be *a given velocity* generated at the point D, which, the effective power of the engine being still continued, would have enabled the train to pass over another *like* undulation? If so, one engine could move 150 tons along the undulation C B D, which amount of tonnage she could not move on a level road, and which *on a level road, whatever velocity was given to the train at starting, would bring the engine gradually to a halt.*

But let Mr. Cheverton direct his attention to the two last experiments which were tried. If *a momentum* (*momentum only*), arising from a velocity at the point B of 19.04 miles per hour, carried the train 323 yards—say as far as *e* on the inclined plane B C—would not a momentum, arising from a velocity of 20.04 miles per hour, carry the same train to the point *f* up the ascent B D? If so, the Firefly engine proved her capability of moving 150 tons along an undulation *e* B *f*, by the employment of her power throughout only *half* the distance, and if this were the case over *one* undulation, will Mr. Cheverton deny that *such would have been the case over succeeding undulations?*

During the next week I may, perhaps, have an opportunity of trying a few more experiments: if so, they shall be transmitted to you. I have expressed my opinions to the *Liverpool Directors*, that the *Firefly engine* is capable of conveying from one summit of an undulation to another the enormous load of from 200 to 250 tons. I may have exceeded the limits of her power in this prophecy; but will Mr. Cheverton admit one point before he hears the result of any further experiments? viz. that *if the Firefly*, or any other engine, can move even 200 tons from summit to summit of *one* undulation, that she is capable of moving an equal load from one summit to another summit of a *second* or greater number of like undulations?

If so, what becomes of his weakest and most untenable argument, that *all I gain* is the comparatively *trifling advantage which gravity gives me at the commencement of locomotion?* I am, Sir, with great respect, your very obedient servant, RICHARD BADNALL.

October 29, 1833.

N. B.—The subject of friction, (trivial as Mr. Cheverton thinks it,) I shall not be ashamed to discuss in my general answer to "S. Y."

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STEAM-CARRIAGES ON COMMON ROADS.—In the December number of the Repertory of Patent Inventions, we find the following account of the performance of a steam-carriage on common roads, which is deemed by many to be conclusive evidence of their ultimate success.

*Steam-Carriages on Common Roads; with a Notice of the Journey to Stoney Stratford.*

[From the Repertory of Arts, &c.]

We are not disappointed in the expectations we hold out, that "steam-carriages might soon be expected on our common roads," a company being now formed for improving the roads, and running steam-carriages between London, Birmingham, Liverpool, and Holyhead: to be called the "London, Holyhead, and Liverpool Steam-Coach and Road Company," Consulting Engineer, Thomas Telford, Esq., Acting Engineer, John Macneill, Esquire.

From the moment that Sir Charles Dance introduced his carriage to Messrs. Maudslay and Field—and those gentlemen saw enough to induce them to undertake to make repairs and changes in the practical details—we were satisfied that the day was not far distant when this description of conveyance would become general; and it only required that the old carriage should be vamped up sufficiently to perform a journey of some extent, carrying such parties as could duly appreciate the performance; and who, from their practical experience, would judge whether sufficient had been done to justify them in lending their characters in the future advancement of this important project. The Brighton journey, from the admirable manner in which it was performed, naturally turned the attention of scientific men to the subject; and the regular running of the carriage between London and Greenwich for eight successive days (Sundays excepted), added to the general feeling, that enough had been accomplished to warrant that more decided steps should be taken to advance the introduction of steam conveyance on our common roads. Hence it was proposed by a number of influential individuals, that a further trial should be made of the engine, with a view to forming a company between London and Holyhead, should Mr. Telford and other engineers be of opinion that the application of steam on common roads had become practicable; and a proposition was made to Sir Charles Dance, that his steam-coach should run to Birmingham. We have already expressed our opinion that the carriage had performed more than could have been expected, from the inequality of many of its parts; and it would probably (as far as the public opinion was concerned) have been desirable not again to have put the carriage on the road; this was the opinion of many, particularly of Sir Charles Dance himself. The liberal manner however in which Mr. Telford and other engineers and scientific men had taken up the matter, and had tendered their talent to bring the carriage before the public, at once induced Sir Charles to give his approbation to the journey, more particularly as the engineers gave it as their opinion, that although they might not arrive at Birmingham, owing to the state of the carriage, together with the badness of some parts of the roads, they would be equally

well able to form a decided opinion from what the present carriage was capable of performing, as to what more might be expected from a new carriage built by practical workmen, and with due attention to the proper distribution of strength. The question to be decided was, whether the principle was good; if, after a fair trial, the answer should be in the affirmative, then there would be no doubt that, placed in practical hands, engines would be produced capable of performing with as much certainty as any other means of conveyance, and with an increased degree of speed and safety: on the other hand, should the opinion prove unfavorable, and the principle be considered defective, this knowledge must have determined Sir Charles Dance on abandoning all further attempts to realize his great undertaking. Having given these introductory remarks, we cannot but express our pleasure in recording the liberal manner in which the engineers and other scientific men have come forward to advance so great a national undertaking, and by their characters and talent have given weight to the cause in which Sir Charles has so long, so arduously, and we may now add, so successfully labored. We are happy in being able thus to state, that the question of the practicability of steam conveyance on our present roads is now set at rest; because we are aware that many and various reports have gone abroad with respect to the Birmingham trip; but we doubt not that the results which we have given will show, that what was performed on that day convinced all parties present that enough had been done.

We will conclude our notice of this subject, by giving a few particulars of the journey of the steam carriage from London to Stoney Stratford, taken from the note book of one of the gentlemen present. "On Friday, the first of November, 1833, Sir Charles Dance's steam carriage started from Gray's Inn Road, at about twenty minutes after three o'clock, A. M., passing through Highgate Archway, arrived at the Wellington (between five and six miles) in thirty-three minutes, the road being on the rise all the way. At this place coke and water were taken in. When again about to start, it was discovered that the weld at the joint of one of the tubes had given way, and that the water was flowing copiously; the carriage was run into the yard, and the fire put out, in order to repair the defect. Mr. Field, on examination, directed the man to cut out the defective part, and plug the ends; this was a work of time, owing to the want of tools. The object however was accomplished, and after four hours' delay the fire was again lighted, and the carriage once more took the road, and without further accident arrived at Stoney Stratford, fifty-two miles; at which place it was determined to dine and stay the night, and proceed forward next day to Birmingham. In the morning, on lighting the fire, it was discovered that the pipe was still defective, and would require to be removed that good joints might be made; this must necessarily cause delay. On a conversation of the parties it was generally agreed, *that the practicability and economy of employing steam carriages as a means of transport for passengers on turnpike roads was fully established.* The carriage remained at Stoney Stratford on Sunday, and was to have returned to town on Monday; but there being a meeting of magistrates and commissioners of public works on that day, who expressed a desire of seeing the performance of the carriage, it was determined to delay the return till Tuesday, on which day it came to town, a distance of fifty-two miles, in four hours and forty-five minutes, even with the bad state of the roads.

"We have with pleasure spoken of the liberality of one party of individuals, we cannot pass over in silence the illiberality of others. Immediately on its being determined that the steam carriage should go to Birmingham, Mr. Macneill (one of the engineers of the Holyhead roads), assisted by Mr. Gordon, undertook to make arrangements for supplies of coke and water at proper distances; by this means it soon became generally known that the carriage was expected: and in addition to the already bad state of this portion of the roads (the St. Alban's trust), soft gravel to the depth of ten inches was laid over many parts, with a view to stop the carriage; but we leave this disgraceful conduct to receive its proper notice in the annual report to government of the commissioners and engineers of the roads. With the exception of this trust, the most liberal feeling was displayed by all parties and every facility afforded."

One of the principal roads having thus been taken up, and countenanced by some of our most celebrated engineers, leaves no doubt that attention will soon be called to other roads. An important benefit attending improving the present roads is, that the course of the traffic will remain unaltered; and thus the immense interests embraced on the "road sides," throughout the country, will retain and perhaps increase their value.

The subject of road making becoming thus a matter of the greatest importance, we hope to be able to give some particulars of the improvements which have been judiciously made on the Holyhead road; and we shall be happy to receive any information on this subject from our correspondents; for we are anxious to see every possible improvement introduced in our means of conveyance, whether on canals, railways, or common roads; we are advocates for all, for each means has its advantages; and we do not hesitate to say, that England is as much indebted for her prosperity to the facility of conveying her produce, as to any part of her economy.

Since writing the above, we have been favored with a copy of the report of the engineers who accompanied the carriage, which we subjoin.

*Report of the Result of an Experimental Journey upon the Mail-Coach Line of the Holyhead Road, in Lieutenant Colonel Sir Charles Dance's Steam Carriage, on the 1st November*, 1833.

Public attention having been attracted to the practicability of travelling with locomotive engines upon ordinary turnpike roads, by a report of a Committee of the House of Commons, of the 12th of October, 1831, stating that, in the opinion of the committee, the practicability of such mode of travelling had been fully established; and more recently by a report of a journey to and from Brighton having been successfully performed by Lieutenant Colonel Sir Charles Dance's steam carriage, as well as by the fact that the same carriage was daily in use between London and Greenwich, conveying numerous passengers through the crowded suburbs of the metropolis without the slightest inconvenience to the public, we were desirous of personally making an experiment of the facility with which a carriage of that description could perform a journey of considerable length; and having selected the mail coach line of the Holyhead road for the purpose of such experiment, we made an arrangement with Sir Charles Dance for the use of his Carriage, on Friday, the 1st inst.

| | | | |
|---|---|---|---|
| *The weight of the carriage, with the water, coke, and three persons upon it, was about | - | - | 3 tons, 5 cwt. |
| The weight of the omnibus coach attached to it | - | 1 " | 0 " |
| The weight of the passengers, their luggage, and some additional sacks of coke, about | | 1 " | 15 " |
| Making the gross weight moved, | | 6 tons, | 0 cwt. |

The motive power was an engine with two cylinders, seven inches in diameter and sixteen inches stroke. The pressure of steam on the tubes constituting the boiler, or generator, was not allowed to exceed 100 lbs. per square inch.

Before the carriage had proceeded six miles, one of the tubes of which Sir Charles Dance's boiler is composed was found to leak so fast as to render repair absolutely necessary: it was also apparent, that the size of the engine was not sufficient to carry so great a weight along a heavy road at any high velocity.

The weather was by no means favorable, there having been much rain in the course of the night and morning, so as to make the road heavy, added to which the winter coating of new materials had, in many places, been laid upon the road. Notwithstanding these obstacles, upon our arrival at Stoney Stratford, 52½ miles from town, it was found by Messrs. Macneill and Carpmael, who had taken accurate minutes of the loss of time occasioned by stoppages, that the average rate of travelling had been seven miles per hour.

Thus there can be no doubt, that with a well constructed engine of greater power, a steam carriage conveyance between London and Birmingham, at a velocity unattainable by horses, and limited only by safety, might be maintained; and it is our conviction that such a project might be undertaken with great advantage to the public, more particularly if, as might obviously be the case, without interfering with the general use of the road, a portion of it were to be prepared and kept in a state most suitable for travelling in locomotive steam carriages.

THOMAS TELFORD, President of the Society of Civil Engineers.
JOHN RICKMAN, Secretary and Commissioner of Highland Roads and Bridges.
C. W. PASLEY, Lieut. Col. Commanding the Royal Engineers, Chatham.
BRYAN DONKIN, Civil Engineer.
TIMOTHY BRAMAH, Civil Engineer.
JOHN THOMAS, Civil Engineer.
JOSHUA FIELD, Civil Engineer.
JOHN MACNEILL, Engineer to the Holyhead Roads.
ALEX. GORDON, Civil Engineer.
WM. CARPMAEL, Civil Engineer.
J. SIMPSON, Engineer to the Chelsea Water-Works.

London, November, 1833.

* These facts have been ascertained by Mr. Joshua Field, Mr. John Macneill, and Mr. Alexander Gordon, civil engineers.

Rochester, Feb. 28, 1834.

To the Editor of the Railroad Journal:

Sir,—Agreeably to your request, I forward the estimated expense of construction of the wood work on the plan suggested in my communication.

Reported expense to the directors of the Buffalo and Black Rock Railroad Company:

| | |
|---|---|
| 10560 feet, lineal measure, of round timber hewed on one side, at 2½ cts. | $264 00 |
| 36960 feet of plank, $12 per M. | 443 52 |
| 7040 feet oak scantling, 2 by 4 inch, $7, | 49 28 |
| 2640 lbs. spike, 8 in. (4 to the lb.) 8½ cts. | 224 40 |
| 16 tons iron, 2 in. by ½ an in. $55, | 880 00 |
| Additional security at the end by sills and iron, distribution of materials, incidentals, &c. | 100 00 |
| Labor in putting down road, (sills placed in the grade by the contractor for grading,) | 84 00 |
| Expense per mile, | $2045 20 |

The estimated cost of the construction of the Tonewanda railroad from Rochester to Attica, 43 miles, on this plan, with sills 12 inches in diameter, plank 2½ inches thick, 20 tons of iron per mile, spike 3 to the pound, as reported to the directors, is, per mile, $2544 63.

The principal saving in the expense is in the grading. Where the surface conforms nearly to the level of the road, the line is cleared, the sills placed in their proper position, and ample ditches cut to form the grade. More than half of the distance of the Tonewanda railroad line is of this description, and can be prepared at a small expense per mile, in consequence of the change in the form of the wood work.

I have made arrangements for putting down with lime, in April, one mile on the Buffalo road, to be done in the following form, viz.: using 2½ bushels of stone lime per rod, 1½ bushels slacked and placed on the sills and over the surface of the grade before putting down the plank; one bushel made into grout and applied to the surface of the planking when the road is completed, covering the surface and filling the joints of the timber, and then covered with sand: Requiring 800 bushels per mile, at 10 cents, $80 00

Labor . 20 00

Expense per mile, $100 00

You have anticipated on this form of road the use of common carriages. This manner of using the road was submitted to the commissioners of Tonewanda railroad in November last, with a view principally of using the first twenty miles from Rochester for market teams, allowing them to enter the road at certain hours in the forenoon, and afternoon to return, and so arranged as to not interfere with trains of cars; which would require the track to be five feet wide, in place of four feet nine inches, the usual width, which would not be materially objectionable. This question must be decided by experiment and circumstances.

I am, respecfully, yours,

Elisha Johnson, Civil Engineer.

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American Patents in England.—The following extract of a letter from a gentleman in England, to his friend in this country, may be useful to those who desire to take out patents in Europe.

*Extract of a letter from London, dated 14th December, 1833.*

"It may be of use to apprize inventors of mechanical improvements in the United States, that it is essential to the security of their interests, if they design to take out patents for their inventions in this country, not to disclose the secret of their inventions in the United States until they have secured a patent here. There are many ingenious mechanics in the United States, in correspondence with their friends in this country, constantly upon the watch to seize any thing new and likely to be useful, and to transmit the particulars to their friends, and thus forestal the rights and interest of the original inventor."

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*On the Causes of Spontaneous Combustion.* By J. A. B. [From the Journal of the Franklin Institute.]

I wish, through the medium of your Journal, to solicit the attention of some of your scientific readers to the causes of spontaneous combustion, generally; and with a view particularly to the investigation of those causes that are liable to produce it in cotton, woollen, and paper factories, from the stock, or waste, being accidentally impregnated with oils, or other substances.

As very few manufacturers are sufficiently acquainted with chemistry to determine accurately the causes of the effects which they may observe, it is therefore desirable that men of science, who have leisure, inclination, and information, (our correspondent has forgotten an important item, viz. *means*,) adequate to the task, should undertake and perform a series of experiments on the intermixture, or chemical combination, of different materials, together with the proportions, situations, degrees of heat, &c., requisite, in each case, to produce spontaneous combustion, and that publicity should be given to the same through the pages of this Journal.

The vast amount of capital invested in various kinds of manufactures, and the large number of mechanics and workmen of every grade and description, who are interested, either directly or indirectly, in the safety and prosperity of our factories, whose daily support and almost sole means of accumulating property are derived from their employment therein, all unite in the requisition.

It is confidently believed that many buildings have been destroyed by fire, originating in spontaneous combustion, and that there is frequently great danger, where it is least suspected.

To aid in the inquiry, agents and superintendents, as well as the observers in the several departments of factories, should unite in communicating such cases as may have come within their notice, together with such facts and circumstances as attended them.

To contribute my mite, I will give an account of the few instances that are within my knowledge, although my statements cannot be as detailed as I could wish, from my not having paid much attention to the subject at the time the observations were made.

The first instance of spontaneous combustion, or that which was apparently so, and was not otherwise accounted for, was in a quantity of wood ashes.

The ashes were in the body of an old waggon, with boards above, at the sides and ends, and had been accumulating for more than two years, to the amount of fifty bushels, or more. The ashes belonged to a very careful man, if the epithet is not altogether inapplicable to a person who would deposit ashes in a wooden vessel, whose constant custom was to have his ashes taken up from the hearth in a metallic vessel, and stand therein until entirely cold, before they were put into the usual place of deposit, and no danger was apprehended from this practice.

One evening about sunset, smoke was perceived to issue from the body of ashes, and it was first supposed that one of the domestics had, contrary to strict orders, put in some hot embers; but, on inquiry, it did not appear that any ashes had been added for three days, and this appeared the more probable, as several vessels were then found standing full of ashes which had been taken up.

When the fire was discovered, it was expected that it was confined to a small spot only, and that a small quantity of water would be sufficient to extinguish it, but, on pouring water on the mass, the ashes were scattered very extensively, and on further examination it was found that the boards in several places were burnt almost through, and that the whole quantity of ashes was in a state of ignition like embers immediately from the fire. Nothing but a timely discovery prevented the destruction of a large portion of a village, for the buildings were all of wood, and so situated that the chance of saving one out of twenty would have been but very small.

I should be glad to throw some further light on this subject, but every thing else in relation to it was mere conjecture, and whether some oily substance was accidentally intermixed with the ashes, or was introduced by carelessness, or otherwise, or from what cause the combustion was produced, remains entirely unknown.

Instances have been known in which cotton has taken fire by wiping up with it oil that had been spilled, both linseed and sperm oil.

Weavers' harnesses in factories are varnished with a varnish made of the following materials, the same, in greater or less proportions, being used by different manufacturers: the usual ingredients are, linseed oil, spirits of turpentime, litharge, red lead, shellac, umber and India rubber. The composition is boiled down to a thick varnish, or laid on to the harness with a brush. The harness is usually made of cotton twine.

I once knew an instance in which a hank of twine, which was varnished for mending harness, took fire, spontaneously, while hanging to dry.

I mention this circumstance, because in many factories it is customary to varnish and hang the new harness to dry in the garret, or some other spare room of the mill, and likewise to lay away the old worn-out harness in the same place, and with very little caution as to the quantity that comes in contact: a practice that may lead to dangerous and destructive consequences.

I hope my remarks will not be considered irrelevant. It will readily be perceived that my object is, at this time, more to obtain than to communicate useful information.

Pittsfield, N. H., December 2, 1833.

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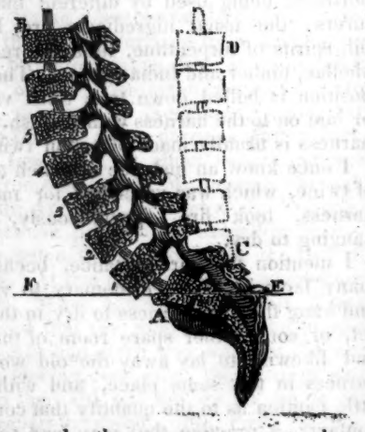
Preservation of Substances by means of Alkalis.—M. Payen has preserved, during many months, polished instruments of iron and steel, by keeping them in solutions of potash and soda,—saturated solutions diluted with one, two, or three times their weight of water. He at first thought that the preserving power depended upon the disappearance of the air, and the carbonic acid in the alkaline mixture, but he afterwards concluded that alkalinity acted an essential part in the phenomenon. In fact, a very small quantity of alkali is sufficient; thus, $\frac{1}{2000}$ and even $\frac{1}{3000}$ of caustic potash in water will preserve from oxidation bars of iron, &c. immersed in it. Lime water, diluted with its own weight of water, or of course without dilution, answers the same purpose. Alkaline carbonates and borax have the same effect, but they must necessarily be stronger.—[Revue Encyclopedique.]

*Animal Mechanics, or Proofs of Design in the Animal Frame.* Continued from page 120. [From the Library of Useful Knowledge.]

The human spine rests on what is called the *pelvis*, or basin: a circle of bones, of which the haunches are the extreme lateral parts; and the sacrum, (which is as the key-stone of the arch) may be felt at the lower part of the back. To this central bone of the arch of the pelvis, the spine is connected; and, taking the similitude of the mast, the sacrum is the *step* on which the base of the pillar, like the heel of the mast, is socketed or morticed. The spine is tied to the lateral parts of the pelvis by powerful ligaments, which may be compared to the shrouds. They secure the lower part of the spine against the shock of lateral motion or rolling; but instead of the stays, to limit the play of the spine forwards and backwards in pitching, or to adjust the rake of the mast, there is a very beautiful contrivance in the lower part of the column.

The spine forms here a semi-circle, which has this effect: that, whether by the exertion of the lower extremities, the spine is to be carried forward upon the pelvis, or whether the body stops suddenly in running, the jar which would necessarily take place at the lower part of the spine, A, if it stood upright like a mast, is distributed over several of the bones of the spine, 1, 2, 3, 4, and, therefore, the chance of injury at any particular part is diminished.

Fig. 6.




For example, the sacrum, or centre bone of the pelvis, being carried forward, as when one is about to run, the force is communicated to the lowest bone of the spine. But then the surfaces of these bones stand with a very slight degree of obliquity to the line of motion; the shock communicated from the lower to the second bone of the vertebræ is still in a direction very nearly perpendicular to its surface of contact. The same takes place in the communication of force from the second to the third, and from the third to the fourth; so that before the shock of the horizontal motion acts upon the perpendicular spine, it is distributed over four bones of that column, instead of the whole force being concentrated upon the joinings of any two, as at A.

If the column stood upright, as indicated at C D, it would be jarred at the lowest point of contact with its base. But by forming a semi-circle A B, the motion which, in the direction E F, would produce a jar on the very lowest part of the column, is distributed over a considerable portion of the column A B; and, in point of fact, this part of the spine never gives way. Indeed, we should be inclined to offer this mode to the consideration of nautical men, as fruitful in hints for improving naval architecture.

Every one who has seen a ship pitching in a heavy sea, must have asked himself why the masts are not upright, or rather why the foremast stands upright, whilst the main and mizen masts stand oblique to the deck, or, as the phrase is, rake aft, or towards the stern of the ship.

The main and mizen masts incline backwards, because the strain is greatest in the forward pitch of the vessel; for the mast having received an impulse forwards, it is suddenly checked as the head of the ship rises; but the mast being set with an inclination backwards, the motion falls more in the perpendicular line from the head to the heel. This advantage is lost in the upright position of the foremast, but it is sacrificed to a superior advantage gained in working the ship; the sails upon this mast act more powerfully in swaying the vessel round, and the perpendicular position causes the ship to tack or stay better; but the perpendicular position, as we have seen, causes the strain in pitching to come at right angles to the mast, and is, therefore, more apt to spring it.

These considerations give an interest to the fact that the human spine, from its utmost convexity near its base, inclines backwards.

### CHAPTER III.

Of the Chest.—In extending the parallel which we proposed between the structure of the body and the works of human art, it signifies very little to what part we turn; for the happy adaptation of means to the end will every where challenge our admiration, in exact proportion to our success in comprehending the provisions which Supreme Wisdom has made. We turn now to a short view of the bones of the chest.

The thorax, or chest, is composed of bones and cartilages, so disposed as to sustain and protect the most vital parts, the heart and lungs, and to turn and twist with perfect facility in every motion of the body; and to be in incessant motion in the act of respiration, without a moment's interval during a whole life. In anatomical description, the thorax is formed of the vertebral column, or spine, on the back part, the ribs on either side, and the breast bone, or sternum, on the fore part. But the thing most to be admired is the manner in which these bones are united, and especially the manner in which the ribs are joined to the breast bone, by the interposition of cartilages or gristle, of a substance softer than bone, and more elastic and yielding. By this quality they are fitted for protecting the chest against the effects of violence, and even for sustaining life after the muscular power of respiration has become too feeble to continue without this support.

If the ribs were complete circles, formed of bone, and extending from the spine to the breast bone, life would be endangered by any accidental fracture; and even the rubs and jolts to which the human frame is continually exposed, would be too much for their delicate and brittle texture. But these evils are avoided by the interposition of the elastic cartilage. On their fore part the ribs are eked out, and joined to the breast bone by means of cartilages, of a form corresponding to that of the ribs, being, as it were, a completion of the arch of the ribs, by a substance more adapted to yield in every shock or motion of the body. The elasticity of this portion subdues those shocks which would occasion the breaking of the ribs. We lean forward, or to one side, and the ribs accommodate themselves, not by a change of form in the bones, but by the bending or elasticity of the cartilages. A severe blow upon the ribs does not break them, because their extremities recoil and yield to the violence. It is only in youth, however, when the human frame is in perfection, that this pliancy and elasticity have full effect. When old age approaches, the cartilages of the ribs become bony. They attach themselves firmly to the breast bone, and the extremities of the ribs are fixed, as if the whole arch were formed of bone unyielding and inelastic. Then every violent blow upon the side is attended with fracture of the rib, an accident seldom occurring in childhood, or in youth.

But there is a purpose still more important to be accomplished by means of the elastic structure of the ribs, as partly formed of cartilage. This is in the action of breathing, or respiration; especially in the more highly-raised respiration which is necessary in great exertions of bodily strength, and in violent exercise. There are two acts of breathing—*expiration*, or the sending forth of the breath, and *inspiration*, or the drawing in of the breath. When the chest is at rest, it is neither in the state of expiration nor in that of inspiration; it is in an intermediate condition between these two acts. And the muscular effort by which either inspiration or expiration is produced, is an act in opposition to the elastic property of the ribs. The property of the ribs is to preserve the breast in the intermediate state between expiration and inspiration. The muscles of respiration are excited alternately, to dilate or to contract the cavity of the chest, and, in doing so, to raise or to depress the ribs. Hence it is, that both in inspiration and in expiration, the elasticity of the ribs is called into play; and, were it within our province, it would be easy to show that the dead power of the cartilages of the ribs preserve life by respiration, after the vital muscular power would, without such assistance, be too weak to continue life.

It will at once be understood, from what has now been explained, how, in age, violent exercise or exertion is under restraint, in so far as it depends on respiration. The elasticity of the cartilages is gone, the circle of the ribs is now unyielding and will not allow that high breathing, that sudden and great dilating and contracting of the cavity of the chest, which is required for circulating the blood through the lungs, and relieving the heart amidst the more tumultuous flowing of the blood which exercise and exertion produce.

### CHAPTER IV.

Design shown in the Structure of the Bones and Joints of the Extremities.—That the bones which form the interior of animal bodies should have the most perfect shape, combining strength and lightness, ought not to surprize us, when we find this in the lowest vegetable production.

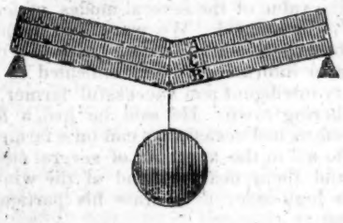
In the sixteenth century, an unfortunate man who taught medicine, philosophy, and

theology, was accused of atheistical opinions, and condemned to have his tongue cut out, and to suffer death. When brought from his cell before the inquisition, he was asked if he believed in God. Picking up a straw which had stuck to his garments, "If," said he, "there was nothing else in Nature to teach me the existence of a Deity, even this straw would be sufficient?"

A reed, or a quill, or a bone, may be taken to prove that in Nature's works strength is given with the least possible expense of materials. The long bones of animals are, for the most part, hollow cylinders, filled up with the lightest substance, marrow; and in birds the object is attained by means (if we may be permitted to say so) still more artificially. Every one must have observed, that the breast bone of a fowl extends along the whole body, and that the body is very large compared with the weight; this is for the purpose of rendering the creature specifically lighter, and more buoyant in the air; and that it may have a surface for the attachment of muscles, equal to the exertion of raising it on the wing. This combination of lightness with increase of volume is gained by air cells extending through the body, and communicating by tubes between the lungs and cavities of the bones. By these means the bones, although large and strong, to withstand the operation of powerful muscles upon them, are much lighter than those of quadrupeds.

The long bones of the human body being hollow tubes, are called cylindrical, though they are not accurately so, the reason of which we shall presently explain; and we shall at the same time show that their irregularities are not accidental, as some have imagined. But let us first demonstrate the advantage which, in the structure of the bones, is derived from the cylindrical form, or a form approaching to that of the cylinder. If a piece of timber, supported on two points, thus—

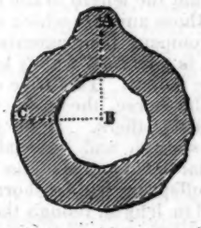
Fig. 7.



bearing a weight upon it, it sustains this weight by different qualities in its different parts. For example, divide it into three equal parts (A, B, C,): the upper part, A, supports the weight by its solidity and resistance to compression; the lowest part, B, on the other hand, resists by its toughness, or adhesive quality. Betwixt the portions acting in so different a manner, there is an intermediate neutral, or central part, C, that may be taken away without materially weakening the beam, which shows that a hollow cylinder is the form of strength. The writer lately observed a good demonstration of this: a large tree was blown down, and lay upon the ground; to the windward, the broken part gaped; it had been torn asunder like the snapping of a rope. To the leeward side of the tree, the fibres of the stem were crushed into one another and splintered, whilst the central part remained entire. This, we presume, must be always the case, more or less; and here we take the opportunity of noticing why the arch is the form of strength. If this transverse piece of timber were in the form of an arch, and supported at the extremities, then its whole thickness, its centre, as well as the upper and lower parts, would support weight by resisting compression. But the demonstration may be carried much farther to show the form of strength in the bone. If the part of the cylinder which bears the pressure be made more dense, the power of resistance will be much increased; whereas, if a ligamentous covering be added on the other side, it will strengthen the part which resists extension, and we observe a provision of this kind in the tough ligaments which run along the vertebræ of the back.

When we see the bone cut across, we are forced to acknowledge that it is formed on the principle of the cylinder; that is, that the material is removed from the centre, and accumulated on the circumference, thus:

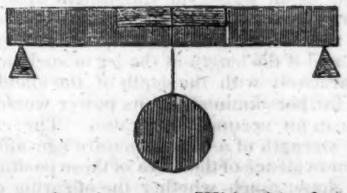
Fig. 8.



We find a spine or ridge running along the bone, which, when divided by the saw in a transverse direction, exhibits an irregularity, as at A.

The section of this spine shows a surface as dense as ivory, which is, therefore, much more capable of resisting compression than the other part of the cylinder, which is common bone. This declares what the spine is, and the anatomists must be wrong who imagine that the bone is moulded by the action of the muscle, and that the spine is a mere ridge, arising by accident among the muscles. It is, on the contrary, a strengthening of the bone in the direction on which the weight bears. If we resume the experiment with the piece of timber, we shall learn why the spine is harder than the rest of the bone. If a portion of the upper part of the timber be cut away, and a harder wood inserted in its place, the beam will acquire a new power of resisting fracture, because, as we have stated, this part of the wood does not yield but by being crushed, and the insertion of the harder portion of wood increases this

Fig. 9.



property of resistance. With this fact before us, we may return to the examination of the spine of bone. We see that it is calculated to resist pressure: first, because it is farther removed from the centre of the cylinder, and, secondly, because it is denser, to resist compression, than the other part of the circumference of the bone.*

* As the line A B extends farther from the centre than B C, on the principle of a lever, the resistance to transverse fracture will be greater in the direction A B than B C.

This explanation of the use of a spine upon a bone gives a new interest to osteology.* The anatomists ought to deduce from the form of the spine the motions of the limb; the forces bearing upon the bone, and the nature and the common place of fracture; while, to the general inquirer, an agreeable process of reasoning is introduced in that department, which is altogether without interest when the "*irregularities*" of the bone are spoken of, as if they were the accidental consequences of the pressure of the flesh upon it.

Although treating of the purely mechanical principle, it is, perhaps, not far removed from our proper object to remark, that a person of feeble texture and indolent habits has the bone smooth, thin, and light; but that Nature, solicitous for our safety, in a manner which we could not anticipate, combines with the powerful muscular frame a dense and perfect texture of bone, where every spine and tubercle is completely developed. And thus the inert and mechanical provisions of the bone always bear relation to the muscular power of the limb, and exercise is as necessary to the perfect constitution of a bone as it is to the perfection of the muscular power. Jockies speak correctly enough when they use the term "*blood and bone*," as distinguishing the breed or genealogy of horses; for blood is an allowable term for the race, and bone is so far significant, that the bone of a running horse is remarkably compact compared with the bone of a draught horse. The reader can easily understand that the span in the gallop must give a shock in proportion to its length; and, as in man, so in the horse, the greater the muscular power the denser and stronger is the bone.

The bone not being as a mere pillar, intended to bear a perpendicular weight, we ought not to expect uniformity in its shape. Each bone according to its place bears up against the varying forces that are applied to it.

* *Osteology*, from the Greek words, signifying discourse on bone, being the demonstration of the forms and connection of the different bones.

THE JACKSON COTTON GIN.—Mr. James Lynch, an ingenious mechanic of this place, has invented a new kind of Cotton Gin, to which he has given the above title. We should suppose from the name that it was intended to operate with a *powerful impulse*.

We have seen a model of the gin; but owing to the fact that we are not much acquainted with machinery of the kind, we are unable to speak with certainty of its advantages. It differs from the common gin in these respects: it contains three separate sets of cylindrical pickers, which are shorter and smaller than the common saw cylinder —and the teeth are finer. The arrangement of these pickers is one above another, the largest set being below, and presenting a front a little convex. The breast or ribs are of a peculiar form, not easily described, and wrought or cast of one piece of sheet metal. The seed cotton rolls in the hopper as in other gins, and is taken from all the pickers and thrown out at the flue, by one cylindrical brush. All the cylinders turn upon points, and are driven by two belts, passing over a drum in the rear of the machine.

The advantages of this gin are supposed to consist in its despatch; its requiring less power; occupying less space; being less

apt to cut or injure the staple; picking cleaner; being less liable to take fire from friction; and from its being less liable to choke and get out of repair, than those now in use.

Mr. Lynch intends going to Pittsburg shortly, with a view of procuring castings for this and other machinery. We wish him much success in the laudable enterprize.

## AGRICULTURE, &c.

[*From the New-York Farmer.*]

Short Horn Durham and Devon Cattle.—A writer in the Genesee Farmer, under the signature of Ulmus, has collected the opinions of breeders on the comparative merits of these cattle, and given his in favor of the Durham, particularly for the heavy pastures of the West. He has omitted to state one objection to this breed. Butchers in New-York, and we believe generally, have prejudices against them. They think their meat is coarser and darker, and that the great depth or thickness of the flesh, unlined or unmarbled with fat, makes this beef more difficult to be cut up for retail with a suitable proportion of flesh and fat. If these objections are well founded, they should have consideration with those who are about to enter into this branch of husbandry. It should be recollected, too, that we have not, as in Great Britain, a large navy and army to consume our heavy beeves, but must depend on our large cities and towns for a market for fine beeves.

Lime Spreading.—We last week had an opportunity of witnessing the performance of a machine for spreading lime invented by Mark Wilson, of this county, and by him patented. Although the machine was much worn, being one of the first constructed, it spread near a hundred bushels in an afternoon. It is quite simple, and could be made, with the exception of the cog-wheels, by any one accustomed to the use of the saw and hatchet. It spreads the lime in any proportion desired, from 10 to 70 bushels to the acre, and with more uniformity than can be done with a shovel. The machines are made for one or two horses, and it is ascertained that two men can spread, with a two-horse machine, four hundred bushels per day. It can be used in windy as well as in calm weather, no inconvenience arising from the dust therefrom.

We conceive it to be an improvement of much consequence to farmers, who make use of lime as manure, entirely doing away a most disagreeable yet necessary branch of their business. The machines, for two horses, cost about 30 or 35 dollars, and as no one farmer could have constant use for them, by three or four joining together, the expense would be so trifling that we should presume every neighborhood would be able to have among them one of these labor-saving machines.—[Bucks Co. Intell.]

On the Culture of the Garden Bean.—I have been very successful for half-a-dozen years in obtaining two crops of beans from the same plants. In the summer of 1826, my first crop of magazan and early long-pod beans was, by a very strong and violent wind, blown down; this was done when the beans were in full blossom. The crop from the blossoms which the plants then possessd was very fine and abundant, and gathered during July. In three weeks after the beans were prostrated, each stem pushed forth from near the root one or more, in some instances four to six fresh stems; these bloomed freely and produced an abundant crop, which was gathered during September. Since that grew, I have uniformly bent down, so as to break the stalk near the root, my first and second crops of beans; I have by this means obtained four crops of beans from two sowings, and which supplied me from July 1st to 31st October. By this method only half the seed was required which I had been accustomed to use, and the greatest advantage to me was that only half the ground was required, so that my advantages by this method are fourfold. I always pinch out the tops when the plants are in full bloom; this throws the vigor into the production of fruit instead of a continued increase of stem and foliage.—[Mr. James Falkland, Pentonville, in the Gardener's and Forester's Record, No. 3.]

On Breeding Horses—[By T. A. Knight, Esq. of Downton, Herefordshire.]—Having introduced, for the use of my tenants, a high priced stallion, of the breed of the large London dray horse, I wish to state to agriculturists the grounds upon which I anticipate much advantage from the introduction of so large an animal. He will, I have reason to believe, be, when full grown, not less than seventeen hands high, and very compact in form.

I conceive myself to have proved, by many experiments, of a part of which an account was published some years ago in the Philosophical Transactions, that the length of the legs of the offspring of all those animals which nature has intended to accompany their parents in flight, at an early age, is governed wholly by the habits of the female parent. This tribe of animals comprehends the horse, the cow, the sheep, and deer, and many others. If the female parent be of low stature, and descended from a breed of a similar form and size, the length of the legs of the offspring will be short, and will not be increased in length, though they will in strength, by any influence of its male parent, however tall and large that may have been; and the converse of this proposition will be found to be equally true.

The experience of almost every farmer must have taught him that horses with drop shoulders and bodies, and capacious chests, are more capable of bearing hard and long-continued labor than those of which the shoulders, and of course the chests, are shallow, and the legs long; but comparatively few know how rapidly the powers of draught of any animal mechanically decrease with the increasing length of the legs, comparatively with the depth of the shoulders and body. If a horse, proportioned as English horses now generally are, be sixteen hands high, his fore legs, measured from the elbow joint, will be about three feet, or nine hands high, and his shoulder about two feet four inches, or seven hands high. If such a horse be able to raise, by means of a cord passed over a pulley, a weight of a thousand pounds, another horse similar to that in every other respect, except that of having its legs eight inches shorter, would, on account of the mechanical advantage of its form, be able to raise twelve hundred and fifty pounds, or one-fourth more, with considerably less exertion; for his power would increase with the diminished length of his legs, nearly in the same proportion as the power of the weight upon the longer arms of the steelyards is increased by being made to recede from the point of suspension; and if the length of the leg of such horse, comparatively with the depth of the shoulder, were further diminished, its power would increase in an accumulating ratio. The enormous strength of a bull of mature age affords familiar evidence of the truth of these positions; and I doubt much whether the offspring of a Norwegian pony, and a strong and low draught mare, would not be found capable of drawing a heavier weight up hill, to any considerable distance, than the largest horse of the ordinary form and proportion; whilst it would not, probably, exceed two-thirds of its weight, nor require more than two-thirds the quantity of food; and it would possess much more activity, and be much less subject to accidents. And I have good reason to believe that more perfect animals, for supplying mankind with food, may generally be obtained by cross-breeding from females of small, and male animals of large size, than from any breed of fixed and permanent habits, relatively to size.—[Farmer's Magazine]

Calves.—The following method of managing calves strikes us as being correct, particularly when the cow gives an abundance of milk. When the supply is small, we should suppose the calf would require additional food besides the milk.

"A friend of ours," says the Genesee Farmer, "has been very successful for many years in producing veal of the finest quality, by the following method: During the first fortnight, the calf is allowed one-half the milk, three-quarters during the third week, and the whole during the fourth week. This is his rule for common cows. In extraordinary cases, he allows more or less, according to circumstances; but deems it of great importance that the calf should be *full fed* during the last week.

"The reason which is given for this practice is, that if the calf takes all the milk at first, it will grow fast, and soon become too large for its supply of nourishment; but if it be stinted at first, its mother's milk will be commonly sufficient to fatten it at the close of the month."

Feeding Live Stock in Winter.—There is perhaps nothing relating to rural economy in which farmers differ more, both in theory and practice, than in feeding their cattle in the winter season. We speak not now of the different kinds of fodder, or of their comparative value in the feeding of stock, but merely of the manner and frequency with which the cattle are fed.

Many farmers believe it indispensable, both as to the good condition of their stock and the greatest economy of fodder, to feed them five times, at least, each day, during the winter; while others practise feeding but three or four times in a day; and again, others but twice.

Experiment alone can prove which of these modes of feeding will carry stock through the winter in the highest order, and with the least expense of fodder. Our own experience, on the subject, is decidedly in favor of feeding but twice in a day. More than twenty years' observation and experience in the keeping of stock, in a climate where, on an average, dry fodder is required to be given more than seven months in the year, has given us an opportunity to test the value of the several modes of feeding above mentioned. We were first induced to try the experiment of feeding twice in a day only, from information communicated to us by a very intelligent and successful farmer, in a neighboring town. He said he had, a few years before, had occasion to call on a farmer's widow to aid in the appraisal of several cows, and found them near the end of the winter in such high order as to draw his particular attention.

He inquired of the widow, particularly, the manner in which they had been kept, and found she had given them nothing but hay, through the winter; and that in consequence of having no man or boy to attend her stock, she had been obliged to do it herself; and being in rather feeble health, she had never fed them but twice a day. This led him to examine particularly as to the kind and quality of the hay with which the cows had been fed. He found the hay not so good as his own, while the cows were in much higher order than his; though his had been fed five times a day through the winter.

From a knowledge of these facts, he afterward adopted the same mode of feeding, giving his cattle just so much twice in each day, as they would eat up perfectly clean, and no more; and has since found it, by experience, both a saving of fodder and a benefit to his stock. From this information we adopted the practice of feeding but twice in a day, something more than ten years ago, and have found, or think we have found, the same favorable results.—[Northern Farmer.]

NEW-YORK AMERICAN.

MARCH 1—7, 1834.

LITERARY NOTICES.

## No. XVII.

*Dorr Prairie. (Indiana,) Dec.* 29, 1833.

Being now on the mail route between Detroit and Chicago, I am travelling very comfortably in a four-horse wagon, with the gentleman mentioned in my last. I found my horse's back so sore at White Pigeon, that it was unpleasant to use him longer under the saddle; and having met with my trunk at Niles, which was forwarded from Monroe by a friend, I am in a measure compelled to adopt what is certainly the most agreeable mode of travelling at this season through a bleak prairie country.

The cold winter moon was still riding high in the heavens, as we ferried over the St. Josephs at Niles this morning. A low-sided scow was the means of conveyance; and after breaking the solid ice near the shore, to loose us from our moorings, it required some pains to shun the detached cakes, which came driving down the centre of the dark rolling river, which, near the opposite shore, had become so wedged and frozen together, that it required considerable exertion to break a way with our long poles, and make good our landing. At length, ascending the bank, a beautiful plain, with a clump of trees here and there upon its surface, opened to our view. The establishment of the Casey Mission, a long, low, white building, could be distinguished afar off, faintly gleaming in the moonlight, while several lodges of the Pottawattamies, three or four hundred of which tribe inhabit this fine district, were plainly perceptible over the plain. The moon, indeed, shone with an effulgence such as I have never witnessed, except beneath the pearly skies of the West. Morning came at last, still, but excessively cold, our horses' manes and our own clothes being covered with hoar-frost, while each blade of grass that shot its wilted spear above the snow, glistened like a diamond's point beneath the uprising sun.

About 10 o'clock, we reached a shantee on Terre Coupee prairie, and finding only a boy of six years old at home, rummaged the whole establishment to find the materials for a breakfast, which we cooked ourselves. Our next stage carried us over a *rolling prairie* to Laporte. The undulating surface resembled the ground swell of the sea, and nothing could be more dreary at this season when the bright sky of the morning became overcast, than moving mile after mile over this frozen lake—for such it appeared—with nothing but its monstrous swell to catch the eye, wherever its glances roamed.

It was afternoon when we reached the little settlement of Laporte, which is situated on a pretty lake in a prairie of the same name, the skirts of which are beautifully timbered. There was just light enough remaining when we reached our present stopping place, a comfortable log cabin, to see the opening ahead through the timber from which this prairie takes its name. It forms a door opening upon an area of the Grand Prairie which runs through the States of Michigan and Illinois, and extends afterwards, if I mistake not, to the base of the Rocky Mountains. I am now in the land of the *Hoosiers*, and find that long-haired race much more civilized than some of their Western neighbors are willing to represent them. The term "Hoosher," like that of Yankee, or Tuckahoe, first applied contemptuously, has now become a sort of national epithet, by which the inhabitants of this fine State are proud to be distinguished. This part of the State is as yet but thinly settled, but the land is now rapidly coming into market; and it is calculated to support a dense population. A new town and harbor called "Michigan City," about 30 miles off, on the shore of the Lake, is fast coming into notice, and giving a spur to the settlements in these parts. The country is, however, still wild enough, and I have a wilder yet to pass, before reaching Chicago.

*Chicago, Jun.* 1, 1834.

We left the prairie on the east, after passing through the door, and entered a forest, where the enormous black walnut and sycamore trees cumbered the soil with trunks, from which a comfortable dwelling might be excavated. The road was about as bad as could be imagined; and, after riding so long over prairies as smooth as a turnpike, the stumps and fallen trees over which we were compelled to drive, with the deep mud-holes into which our horses continually plunged, were anything but agreeable. Still, the stupendous vegetation of the forest interested me sufficiently to make the time, otherwise enlivened by good company, pass with sufficient fleetness, though we made hardly more than two miles an hour, throughout the stage. At last, after passing several untenanted sugar camps of the Indians, who, of course, were elsewhere at this season, we reached a cabin prettily situated on the banks of a lively brook, winding through the forest. A little Frenchman waited at the door to receive our horses, while a couple of half intoxicated Indians followed us into the house, in the hope of getting *a'netos* (vulgarly a treat) from the newcomers. The usual settlers' dinner of fried bacon, venison cutlets, hot cakes, and wild honey, with some tolerable tea and Indian sugar, as that made from the maple tree is called at the West, was soon placed before us, while our new driver, the frizzy little Frenchman, already mentioned, harnessed a fresh team, and hurried us into the wagon, as soon as possible. The poor little fellow had 30 miles to drive before dark, on the most difficult part of the route of the line between Detroit and Chicago. It was easy to see that he knew nothing of driving, the moment he took his reins in hand; but when one of my fellow-travellers mentioned that little *Victor* had been preferred to his present situation of trust from the indefatigable manner in which, before the stage route was established last season, he had for years carried the mail through this lonely country—swimming rivers and sleeping in the woods at all seasons,—it was impossible to dash the mixture of boyish glee and official pomposity with which he entered upon his duties, by suggesting any improvement as to the mode of performing them. Away then we went helter skelter through the woods—scrambled through a brook, and galloping over an arm of the prairie, struck again into the forest. A fine stream, called the Calamine, made our progress here more gentle for a moment.—But immediately on the other side of the river was an Indian trading post, and our little French Phaeton, who, to tell the truth, had been repressing his fire for the last half hour, while winding among the decayed trees and broken branches of the forest, could contain no longer. He shook the reins on his wheel horses, and cracked up his leaders with an air that would have distinguished him on the Third Avenue, and been envied at Cato's. He rises in his seat as he passes the trading house; he sweeps by like a whirlwind; but a female peeps from the portal, and it is all over with poor Victor. That backward glance which he now casts behind to see the impression he has made upon the fair, is fatal to his triumph. The infuriate car strikes a stump, and the unlucky youth shoots off at a tangent, as if he were discharged from a mortar. The whole operation was completed with such velocity, that the first intimation I had of what was going forward was on finding myself two or three yards from the shattered wagon, with a tall Indian in a wolfskin cap standing over me.—My two fellow passengers were dislodged from their seats with the same want of ceremony; but though the *disjecta membra* of our company were thus prodigally scattered about, none of us providentially received injury. Poor Victor was terribly crest fallen; and had he not unpacked his soul by calling upon all the saints in the calender in a manner more familiar than respectful, I verily believe that his tight little person would have exploded like a torpedo.—A very respectable looking Indian female, the wife probably of the French gentleman who owned the post, came out and politely furnished us with basins and towels to clean our hands and faces, which were sorely bespattered with mud, while the grey old Indian before mentioned assisted in collecting our scattered baggage. The spot where our disaster occurred was a sequestered, wild-looking place. The trading establishment, consisted of 6 or 8 log cabins of a most primitive construction, all of them grey with age, and so grouped on the bank of the river as to present an appearance quite picturesque. There was not much time, however, to be spent in observing its beauties. The sun was low, and we had 29 miles yet to travel that night before reaching the only shantee on the lake shore. My companions were compelled to mount two of the stage horses, whilst I once more put my saddle on mine, and leaving our trunks to follow a week hence, we slung our saddle bags across the cruppers and pushed directly ahead. A few miles easy riding through the woods brought us to a dangerous morass, where we were compelled to dismount and drive our horses across, one of the party going in advance to catch them on the other side. A mile or two of pine barrens now lay between us and the shore, and winding rapidly among the short hills covered with this stinted growth, we came suddenly upon a mound of white sand at least fifty feet high. Another of these desolate looking eminences, still higher, lay beyond. We topped it; and there, far away before us, lay the broad bosom of Lake Michigan—the red disk of the sun just sinking beneath it, and the freshening night-breeze beginning to curl its limpid waters on the shore; and now having gained their verge, whichever way we turned, there was nothing discernible but the blackening lake one side and these conical hills of shifting white sand on the other. Some of them, as the night advanced and objects were only discernible by the bright starlight, assumed a most fantastic appearance, and made me regret that I could not visit the "Sleeping Bear" and other singularly formed mounds which many miles farther to the north, swell from two to three hundred feet above the level of the lake. The deep sand into which our horses sunk to the fetlocks was at first most wearisome to the poor beasts, and having twenty miles yet to travel entirely on the lake shore, we were compelled, in spite of the danger of quicksands, to move as near the water as possible. But though the day had been mild, the night rapidly became so cold that, before we had proceeded thus many miles, the beach 20 yards from the surf was nearly as hard as stone, and the finest McAdamized road in the world could not compare with the one over which we now galloped. Nor did we want lamps to guide us on our way. Above, the stars stood out like points of light, while the resplendant fires of the Aurora Borealis shooting along the heavens on our right, were mocked by the livid glare of the Kankakee marshes burning behind the sand hills on our left. The lake alone looked dark and lowering; though even its gathering waves would smile when touched with light as they broke upon the shore. The intense cold seemed to invigorate our horses; and dashing the fire from the occasional pebbles, they clattered along the frozen beach at a rate that brought us rapidly to our destination for the night. It was a rude cabin, built of the trunks of the stunted pines around, standing behind a sandy swell about two hundred yards from the shore. My fingers were numb with cold; and seeing a rough looking fellow moving from the door towards the horses of my companions, I requested him to take mine also; but upon his politely rejoining that "he was nobody's hostler but his own" I could only wish him a more civil master, and proceeded to take care of the

animal myself. A brake of stunted evergreens, near by, supplied the place of a stable; and passing a whisp of dry grass over the reeking limbs of my four-footed friend, I flung my cloak over his back and tethered him for the night. The keeper of the rustic hostelrie came up just as I got through with this necessary task, and explaining to me that the insolent lounger was a discharged stage driver, returned with me to the house for a measure of corn; while I, guided by the light flickering through the crevices of his frail dwelling rejoined my companions nestled with two other half-frozen travelers around the grateful fire within. The strangers were both western men; one the brother of a distinguished poet in New York, for sometime settled in Illinois; and the other an Indian trader of long standing in Chicago. Warlike incidents in border story and the pacific dealings between the whites and Indians, formed the chief subjects of conversation, which soon became general, and was prolonged to a late hour: finally the late treaty held at Chicago—at which, as you have probably seen in the newspapers, several thousand Indians were present—was discussed, and the anecdotes that were told of meanness, rapacity, and highway robbery, (in cheating, stealing, and forcibly taking away) from the Indians, exasperated me so that I expressed my indignation and contempt in unmeasured terms. The worthy trader, who was a middle aged man, of affable, quiet good manners, seemed to sympathize with me throughout; but the whole current of my feelings was totally changed; when, upon my observing shortly afterwards to another gentlemen that "I should have liked to have been at Chicago a year ago," my warm coadjutor ejaculated from under the blanket where he had in the meantime bestowed himself—"ah, sir, if you had, the way in which you'd have hooked an Indian blanket by this time would be curious." The chivalric knight of La Mancha, himself, could not have sustained heroics under such a home thrust, but must have burst into the hearty laugh in which I was joined by all present. The hour of sleep for all at last arrived, and a couple of wooden bunks, swung from the roof, falling to the lot of those who had come in first, I wrapped myself in a buffalo skin and placing my saddle under my head for a pillow, soon "slept like a king;" a term, which, if

"Uneasy lies the head that wears a crown,"

be true doctrine, is, probably, *quasi lucus* &c.

Our transient acquaintances parted from us in a most friendly manner in the morning; and after waiting in vain till near noon to see if by any chance little Victor might not e able to forward our trunks, to this point, we mounted once more, and pushed ahead with all speed to accomplish the remaining 20 or 30 miles between the shantee and Chicago. Our route was still along the shore; and after passing around the end of the lake and taking a northwardly direction, the way in which the ice would come down the bleak shore of the lake "was curious." We gallopped at full speed, every man choosing his own route for himself along the beach, our horse's hoofs ringing the while as if it were a pavement of flint beneath them. The rough ice piled up on the coast prevented us from watering our beasts; and we did not draw a rein till the rushing current of the Calamine, which debouches into Lake Michigan some 10 miles from Chicago, stayed our course. A cabin on the bank gave us a moment's opportunity to warm, and then being ferried over the wintry stream, we started with fresh vigor, and crossing about a mile of prairie in the neighborhood of Chicago, reached here in time for an early dinner. Our horses this morning seem none the worse for this furious riding, their escape from ill consequences being readily attributable to the excellence of the road and the extreme coolness of the weather while travelling it. For my own part, I never felt better than after this violent burst of exercise. We had not been here an hour before an invitation to a public ball was courteously sent to us by the managers; and though my soiled and travel-worn riding dress was not exactly the thing to present one's self in before ladies of an evening, in my earnestness to see life on the frontier, I easily allowed all objections to be overruled by my companions, and we accordingly drove to the house in which the ball was given. It was a frame building, one of the few as yet to be found in Chicago, which, although one of the most ancient French trading posts on the lakes, can only date its growth as a village since the Indian war 18 months since. When I add that the population has *quintupled* last summer, and that but few mechanics have come in with the prodigious increase of residents, you can readily imagine that the influx of strangers far exceeds the means of accommodation, while scarcely a house in the place, however comfortable looking outside, contains more than two or three finished rooms. In the present instance, we were ushered into a tolerably sized dancing-room, situated over a lath and plastered parlor and bar-room, and having its once green walls so ingeniously covered with pine branches and flags borrowed from the garrison, that with the finished ceiling above, it presented a very complete and quite pretty appearance. It was not so warm, however, that the fires of cheerful hickory which roared at either end could have been readily dispensed with. An orchestra of unplained boards was raised against the wall, in the centre of the room, the band consisting of a tall dandy negro, with his violin, a fine military-looking bass drummer from the fort, and a volunteer citizen, who alternately played an accompaniment upon the flute and triangle. Blackee, who flourished about with a great many airs and graces, was decidedly the king of the company, and it was amusing, while his head followed the direction of his fiddle bow with pertinacious fidelity, to see the Captain Manuel-like precision with which the soldier dressed to the front on one side, and the nonchalant air of importance which the cit attempted to preserve on the other. As for the company, it was such a complete medley of all ranks, ages, professions, trades and occupations, brought together from all parts of world, and now for the first time met together that it was amazing to witness the decorum with which they commingled on this festive occasion. The managers, (among whom were some officers of the garrison,) must certainly be *au fait*, at dressing a lobster and mixing champaigne punch in order to have produced a harmonious compound from such a collection of contrarieties. The gayest figure that was ever called by quadrille playing, Benoit, never afforded me half the amusement that did these Chicago cotillions. Here you might see a veteran officer in full uniform balanceing to a tradesman's daughter still in her short frock and trowsers, while there the golden aiguilette of a handsome surgeon flapped in unison with the glass beads upon a scrawney neck of 50. In one quarter the high placed buttons of a lindsey woolsey coat, would be *dos a dos* to the elegantly turned shoulders of a delicate looking southern belle, and in another a pair of cinderella like slippers would chassez cross with a brace of thick soaled broghans, in making which, one of the lost feet of the Colossus of Rhodes, may have served for a last. Those raven locks dressed *a la Madonne*, over eyes of jet, and touching a cheek where blood of a deeper hue mingling with the less glowing current from European veins, tell of a likeness drawn from the original owners of the soil; while these golden tresses floating away from eyes of heaven's own color over a neck of alabaster recall the Gothic ancestry of some of "England's born." How piquantly do these trim and beaded *leggings* peep from under that simple dress of black, as its tall nut-brown wearer moves as if unconsciously through the graceful mazes of the dance. How divertingly do those inflated gigots, rising like windsails from that little Dutch-built hull, jar against those tall plumes, which impend over them like a commodore's pennant on the same vessel. But what boots all these incongruities, when a spirit of festive good humor animates every one present. "It takes all kinds of people to make a world" (as I hear it judiciously observed this side the mountains) and why should not all these kinds of people be represented as well in a ball-room as in a legislature? At all events, if I wished to give an intelligent foreigner a favorable opinion of the manners and deportment of my countrymen in the aggregate, I should not wish a better opportunity, after explaining to him the materials of which it was composed, and the mode in which they were brought together from every section of the Union, than was afforded by this very ball. "This is a scene of enchantment to me, sir," observed an officer to me, recently exchanged to this post, and formerly stationed here. "There were but a few traders around the fort when I last visited Chicago, and now I can't contrive where the devil all these well-dressed people have come from!" I referred him to an old resident of three months' standing, to whom I had just been introduced, but he could throw no light upon the subject, and we left the matter of peopling Chicago in the same place where philosophers have put the question of the original peopling of the continent. I made several new acquaintances at this New Year's ball, and particularly with the officers of the garrison, from whose society I promise myself much pleasure during my stay. The geographical position of Chicago is so important, that I must give you a more minute description of the place in my next. Would that in folding this, I could enclose you half the warm wishes for your welfare which the season awakens in my bosom.

H.

THE AMERICAN ANNUAL REGISTER, for 1831-2; Brattleborough, (Vt.) FESSENDEN & Co. Boston.—We did intend to go into a somewhat detailed account of the merits of this most useful publication, in the hope of awakening attention to it commensurate with its real value, and that might in the event lead to a patronage more adequate than any it has yet received to the labor and talent with which it is prepared and conducted, and to the admirable manner as to typography, paper, &c., in which it is got up. But we have no space in our sheet—and sooth to say little leisure of our own—to devote to it at present such a notice as it should receive—as at some future day it shall receive from us.

Meantime, we make from the number before us two extracts, each of interest in its way. The first which is annexed, treats the policiy of unduly hastening the settlement of the public lands, in a proper American spirit, and with a farreaching view of the benefits to distant generations of our own native citizens, for such a nursery for freemen.

There is no necessity of settling the West faster than the natural increase of the nation will do it; and the descendants of American citizens, who have been nurtured in the habits of devotion to the Union, and of respect to its laws, will furnish a better stock, than those who have been driven by improvidence or necessity from their native soil, to a country of whose institutions and laws, they are utterly ignorant, and to which they can consequently, bear no well founded attachment. The public domain now presents territory, where the surplus population of the Union can extend itself for centuries to come; and from its extent and fertility it affords a strong security, that the American people will not be forced by density of population to that extremity of misery and crime, which is exhibited in Ireland and in the more populous counties of England. In extending themselves slowly over the continent, they wil do it surely.

Time will be allowed for their political institutions to take root and to fasten themselves upon the attachments of the people. The federal government, known to them as first organizing them into political communities, and as protecting them from the inroads of savages and from intestine commotions, will be regarded with affection and confidence. They will become strongly bound to the Union by ties of early association, and the descendants of emigrants from the pleasant hills of New England, the verdant banks of the Hudson, and the sunny shores of the Chesapeake, when associated in new communities and states beyond the Rocky Mountains, will turn with feelings of respect and fraternal attachment towards the glorious scenes of that great political drama, that opened upon the field of

Lexington, and received its crowning triumph upon the plains of Yorktown. This brilliant prospect, however, cannot be realized through a policy, which would rapidly fill this vast territory with a population, driven by the improvidence of their fathers, or the cruelty of their governments from the shores of Europe. Ignorant, poor, discontented, and unfit to struggle with the difficulties of the wilderness, they would at best form a heterogeneous mass with all their early associations in favor of different institutions and other countries.

The second we give mainly to rebut a charge which we have seen made in the Globe, and in other party papers, that the facts of history purported to be given in this Register, are misrepresented through party bias. A more unfounded imputation was never uttered; for, though the Editor entains, and in a proper way expresses, when needful, very positive political opinions, they in no instance interfere with facts or truth, in his manner of recording events.

The rejection of Mr. Van Buren by the Senate of the United States, is thus stated and commented upon:

After a full discussion on this nomination with closed doors, the Senate finally, by the casting vote of the Vice President, resolved not to confirm the nomination, yeas 23, nays 23. Mr. Van Buren was accordingly rejected; and after having presented his credentials at the Court of St. James, was compelled to return to the United States. As this was the first time that a minister had been compelled to return from his post, on account of the refusal of the Senate to concur in his appointment, great excitement was produced by this decision. The reasons set forth were subjected to severe criticism, and the rejection was by many imputed to party feeling and personal jealousy.

The friends of the Executive were urged to sustain him against an attack, which it was said was aimed at him. He was induced to come before the public and avow himself to be the author of the objectionable instructions; and his party was persuaded to bring forward Mr. Van Buren as a candidate for the Vice Presidency, as the only means of vindicating the honor of the President from a censure, which by his own confession ought to have been bestowed upon him. It was also urged, that if the Senate had been sincere in asserting, that the character of those instructions was a disqualification for a diplomatic office, Mr. McLane should have shared the same fate with Mr. Van Buren. If the instructing a minister to invite a foreign government to interfere in the domestic politics of the United States, furnished a sufficient reason why the autnor should not represent the republic abroad, surely the execution of those instructions ought to have excluded that minister from the cabinet councils, where measures to vindicate the honor and advance the interests of the country, are originated.

The lofty sense of national honor, which could tolerate the employment of the author of instructions so derogatory to the character of the country, would never have consented to the elevation of the ambassador by whom they were executed. This exalted feeling makes no compromise with expediency, and it regards with equal disdain, the author of a policy, which places the republic in the attitude of supplicating a foreign government, and the envoy who hesitates between the loss of his office and the presenting so abject a request at the foot of the British throne. No distinction could be made between them, which justified the different fates awarded to the ex-secretary and the minister, and the country was at a loss to comprehend the reason, why one was rejected and the other was cofirmed.

In the contest that ensued, consequently, the opposition lost the advantage of the principle upon which it had rested the recall of Mr. Van Buren, and left the public to infer, that other motives had contributed to swell the vote against his appointment.

Angel's Series of Common School Books, from 1 to 6.—Philadelphia: Marshall Clark & Co. Providence, (R. I.) Marshall, Brown & Co.—Mr. Oliver Angel, the author of these books, has twenty years' experience as a practical teacher, in one of the Providence district schools. His aim in preparing this series seems to have been, to carry on the learner from the first lessons in A B C, to a comprehension and appreciation of the finest compositions in the language, by a regularly progressive system—each book presenting something more advanced and consequently more difficult than the preceding.

No. 1. sets forth the first steps—gives the alphabet, and a series of short words not exceeding two syllables.

No. 2 advances into larger words, longer sentences, and some short stories, care being taken in each to select the words required to be spelled, out of the reading lessons.

No. 3 arrives at figures and numbers, and the multiplication table, pursuing a progressive march as in other things.

Nos. 4, 5 and 6 are chiefly reading books, each a little more advanced than the other, until No. 6 becomes a large and well filled volume of extracts from approved writers. In each of these books questions are annexed to the extracts, in order that the fidelity with which scholars learn may be tested. The whole seem to us executed with sound judgment.

A portrait of the late *Bishop Moore*, of New York, intended for the forthcoming No. of the Protestant Episcopal Pulpit, has been sent to us. It is a fine engraving, and forcibly recalls the meek, spiritual, and venerable head of that truly Christian Bishop.

Music.—Major Jack Downing's March, composed and arranged for the Piano, by J. T. Norton, and published by Hewitt & Co., is the only piece of music we have recently to acknowledge.

## FOREIGN INTELLIGENCE.

Two Months later from Canton.—We have been favored with commercial advices from Canton to Oct. 22d. The Thos. Dickason was expected to sail for New York about Nov. 10th, but with few or no teas. U. S. Bank's exchange on London sold at 4s. 4d. per dollar. No sail of private bills. Ship Morrison, hence, arrived at Canton Oct. 17th.

In port, Nabob, Liberty, Eliza, Superior, Tartar, Cabot, Sumatra, Hope, Vancouver, Thos. Dickason, Col. Howard, Brighton, Panama, Omega, Martha, Neponset, Merchant, [Timor, Sabina, Hellespont, arrived Oct. 12th and 13th,] Morrison, and Italy.—Sailed, Oct. 15, brig John Gilpin, for Manilla.—[Jour. of Com.]

[*From the Journal of Commerce.*]

Latest from Mexico.—By the ship Mexican, Capt. Davis, we have Vera Cruz papers to February 3d inclusive. Not the least important subject which at present occupies the attention of the Mexicans, relates to ecclesiastics and the church. One article is written to show that ecclesiastics ought to take no part in temporal affairs; several others are occupied in commenting very freely upon the conduct of the Pope towards Don Pedro, and his party; another is headed "The Jesuit religion, the cause of immense evils to the State;" another is taken up in discussing the nature and origin of ecclesiastical property; another in favor of toleration, &c.

Great complaints are made of the depredations of robbers, in various parts of the country. A Mexican paper of Jan. 24th says, "The stage was robbed twice last week, and once this week."

Mexico, Jan. 27.—The Mexican capital is so plagued with robbers, that the peaceable inhabitants do not find themselves safe even in the most frequent places.

It is stated that Col. Austin had been arrested in Saltillo.

Gen. Pedraza has been appointed a member of the General Direction of public instruction.

Later from Europe.—By the ship Henri IV. Captain Castoff, we have Paris dates af the 29th, Havre of the 30th, and London of the 27th.

In Portugal, the Queen's party have gained another victory, which promises important results.

The dates from Madrid are only two days later than before received by an arrival at Boston. The change of Ministry is confirmed, and it is also announced that orders have been issued for the *convocation of the Cortes.*

London, Jan. 27.—*Brilliant Victory over the Miguelites.*—"We have received important news from Portugal. Gen. Saldanha has entered Leiria, capturing the whole of Miguel's forces which were in that town. The news was brought to London this morning by an officer who landed at Falmouth, and immediately posted to London. The following is a private letter with which we have been favored:

"Lisbon, Jan. 18.—I transmit you here the Cronica of yesterday and this day, by which you will see the result of the first movement of the Conde de Saldanha's division. Those who are intimately acquainted with the situation of Leira will know that by the next packet you will hear that our army is in Coimbra, the third city of the kingdom; and his having effected a combination with the army in Oporto will speedily leave an unbroken communication between that city and Lisbon. The Miguelite force in Santarem will be obliged to retire to the southward, pursued by the 11,000 men whom we have in observation at that place; and I feel persuaded you will very shortly learn that they are completely upon the frontier of Spain. Here all is enthusiasm and confidence, and the Government feels itself more secure than ever." This is Gen. Saldanha's report to the Minister of War, contained in the Chronica of the 17th and dated Leira, January 15:

"*Army of Operations.*—Most Illustrious and Excellent Senhor,—His Imperial Majesty's orders are executed. Leiria is in our possession. Of the garrison, which was composed of 1,476, and 46 cavalry, only three officers and six cavalry soldiers were able to escape, taking the road to Coimbra. The Governor, Brigadier Jose de Mello Pita Osorio, two superior officers, the Capt. Mor, and many other prisoners are in our hands, as well as four pieces of artillery, and the Ensign of the regiment of militia of Leiria. The Corregidor, a perverse man, was killed; in a word, the overthrow could not be more complete. To-morrow I shall have the honor of sending to your Excellency the details of this day, and of the movements which preceded it. A corporal of Oleadores, No. 5, wounded; this is all our loss! The affair of Alcacer is well avenged. God preserve your Excellency.

(Signed) "Conde de Saldanha."

"Postscript—All the enemy's baggage fell into our power."

Gen. Saldanha, though intending to move towards Combra, remained at Leira on the 16th, and on that day sent a despatch to the Government, giving a full account of his proceedings from the time of leaving the army before Santarem on the 12th, and details of his success at Leira. The Miguelites, it appears, gave up their strong position in the Castle, apprehensive of having their retreat cut off. As they were moving away, they were attacked by the cavalry under the orders of Colonel Bacon, and completely routed. The result is stated in the despatch already quoted. Beside the Governor, Col. Don Jose de Mello Freire Pita Oxorio, Saldanha has captured a considerable number of officers and soldiers. The news from Santarem is also of importance. By the *Chronica* of the 18th, it appears that on the 15th, the day of the last accounts, the cholera morbus was raging violently at Santarem, and that provisions and forage were getting so scarce, that since the 16th more than twenty have died per day. The Pedroites have gained an advantage also at Marvao; and, according to all these accounts, the Miguelites cannot possibly long hold out. Even Miguel himself is said to be very ill, and has of late not allowed himself to be seen.—[Courier.]

Spain.

*Convocation of the Cortes.*—The *Indicateur* of Bordeaux of January 25th says: "We yesterday learnt officially by a courier extraordinary, that the Spanish Government has issued two Ordinances for the immediate convocation of the Cortes *par estamentos.*"

Extract of a letter from Madrid, dated the 17th instant: "It is certain that the Great Powers have complained to England and France of the late excursions of the Spanish troops into Portugal, and that the British Cabinet has delivered to ours a note protesting against their being renewed under any pretence, and declaring that his Britannic Majesty would consider any future violation of the Portuguese territory by a Spanish army as an act of aggression against Great Britain, in consequence of the union which exists between that nation and Portugal, founded on ancient treaties. This had an ill effect at the court of Spain." No intelligence had been received from Madrid subsequent to the 17th. At that time the population of the capital was full of enthusiasm at the accession of M. Martinez de la Roda to the ministry.

The Sentinelle des Pyrenees of Bayonne has the

following, of the 17th inst. from Aldudes;—"It is said that the port of Guetetaria is in the power of the Carlists, and that two British vessels have landed 10,000 muskets, and equipments for 10,000 men.

Colonel Bayona, who took refuge in France, having learnt that the Carlists had retired, immediately returned to the ironworks of Orbaiceta, of which he is director. The Spanish families, who, for some days past, have lived in huts on the French frontier, will doubtless return to their homes without delay."

FRANCE.

M. Laffitte's Hotel, in the Rue Laffitte, was put up to auction yesterday at an upset price of 978,000 fr., but there being no bidder the sale was postponed to an indefinite period.

PARIS, JAN. 28.—The Budget Committee have signified their dissent from the number of men laid in the estimate of the Minister of War, for 1833, Marshal Soult proposed a conference with them, and the Committee assembled for that purpose on Sunday, at the Palace of the Chamber of Deputies. In the estimates the effective of the army was fixed at 374,000 men, but the Marshal consented to reduce it to 310,000, the same number as voted for 1834. Some of the members of the Committee were for reducing it to 294,000 men, and others for fixing it at 310,000. The Minister declared that the honor and interest of the country did not allow him to descend below 310,000 men, and that if this number were refused Ministers would resign in the mass.

Postscript to a letter from the French Admiral Baron Hugon, commanding the French squadron on the Levant, by which he announces to the Minister of the Marine the loss of the French ship of the line La Superbe.

"P. S. I opened my letter to announce that the Cornélie has just been descried. I have also learnt that the American ship the United States, Commodor Patterson, which left the Bay of Smyrna a few hours before the Superbe, after having lost some of her masts, had her sails torn away, and her boats carried off, and being nearly embayed off the coast of Andros, and expecting every moment to be lost, a sudden gleam of light enabled her to discover the narrow passage between Tina and Andros, she was enabled to get through it and gain the harbor of Milo."

The *Iphigenie* frigate, bearing the flag of Rear-Admiral Baron Hugon, and the *Duquesne*, of the line, Capt. Casey, arrived at Toulon on the 26th inst from Nauplia, bringing with them 446 men of the crew of the *Superbe*, (wrecked)

FOREIGN VARIERIES.

THE ARTS IN AUSTRIA.—The care taken by the Austrian Government to prevent the people from mixing themselves up with politics, has the natural consequence of driving them to the study of the arts and sciences. Thus there are few countries in which we find so many savans and amateur artists as in Austria. Every person in comfortable circumstances gives himself up to the study of some favorite branch of art or science, to which he consecrates all his leisure hours; and what lover of such pursuits has not admired the beautiful galleries of pictures of the Princes Esterhazy and Lichstentein, as well as the splendid libraries of Count Czarnin, Lamberg, &c., and the treasures of M. de Hammer, who possesses a greater number of Oriental manuscripts than are to be found at Constantinople or the College of Ispahan? M. Trost, directed by another kind of love for Eastern curiosities, has made a collection of all the varieties of pearls which are found in the fisheries of the Persian Gulf, at Ceylon, or in the divers harbors of the Indian Ocean; and M. Pehl, a collection of Brazilian flowers not to be equalled in Europe Collections of herbs, medals, minerals, libraries full of rare books, and galleries of pictures, are found in every town of the least consequence in the Austrian empire. At Milan, the Chevalier Litta Blumi exhibits his colossal map of Italy; and at Pestk, M. Jancowich does the honors of his rich collecrion of Hungarian antiquities. It will appear, therefore, that it is not only in the capital that precious and varied treasures are to be seen. Vienna, however, distinguishes herself above all the towns of Austria for her cultivation of music.

A stranger visiting Vienna would think that on music actually depended the existence of the people, for music of all descriptions strikes the ear in every direction. To enumerate all the Unions and Societies, public and private, instituted for the propagation of this science, would be perfectly impossible. The chief public institutions is the Imperial Music School, at which pupils may become members gratuitously. The Society of Amatures, established about twenty years, also has had a great influence on the development of the science of music in Austria. The archives of this Society possess more than 800 concerted pieces, and the library 1240 works on the theory and practice of music; besides a fine gallery of portraits of the most celebrated composers, a large collection of autographs, and a museum of rare, ancient and modern musical instruments. The Royal Library is truly one of the richest depots of ancient and modern music. It consists of sixteon large apartments, containing 4000 musical works, which number 6500 volumes. Amongst the private collections, that of Count de Fuschs is most worthy of notice, consisting of upwards of 1000 concerted pieces and M. Alexander Fuschs, brother of the former, has a collection of autographs of the most celebrated musical composers, amounting to 500. To the lovers of a cremona the collection of instruments of M. Francis Rzchaczek would offer a great treat; it consists of upwards of 200 violins, violincellos, and double basses.

*The Whigs and the Church.*—We have, hitherto, in every question of politics in which we have presumed to say a word, endeavored to appear at once open and honest. Not to be open is, indeed, to be dishonest. But we have also, when stating our opinions, stated them with due reference to the judgments of our superiors; and we shall, as respects this important question, do as we have done on former occasions.

Our opinion here is not wavering, though it may be wrong. It is decided; we are sorry to hear of those proceedings at Gateshead, the object of which, as we understand the reports, is to make a first attack upon the House of Lords at a point where it is by far the least vulnerable. We are not amongst those who like to see the church supported by such "pillars" only as are set up by the solicitation of a king's minister or the intrigues of a royal mistress. But, supposing the election of bishops to be proper, we have no hesitation to declare that in this country, which has a state established church, the bishops have at least as much claim to respect and confidence, that they are, at the very least, as members of the the Upper House, as necessary to the state as the other lords. If the saying, "*Ordo Episcorum robur reipublicas*," be found to be not true, the whole of the *ordo Liacorum*, with which the bishops are associated in the House of Lords, had better quickly prepare themselves with proofs to show what strength *they* afford to the nation.—"Bishops," it has been said, "should not take part in matters of state." Why not, since the department over which they preside is a part of the state? Much better, it seems to us, that both they and their doings should appear in the House of Lords, then that, being hidden by obscurity, they should be perhaps more under the beck of corruption than a seat in the House can make them.

Probably we are letting out all we think at a moment when some who would disagree with us have views undeclared. If so, any such advantage against us is unfair. There are some who have, indeed, been pretty open in their avowals. But there are a great many who would do their best towards effecting the whole of that, the greater part of which they profess not to aim at. What then are the propositions to be discussed?—what is the end in view, and the whole of it? To undermine the church in general; to remove only its main supports; to put an end to bishops, merely to make a hit at the hereditary lords through the bishops, or to abolish the joint bench, spiritual and temporal, altogether.

If the church is now in danger, the danger is owing to the wisdom of the whigs; the whigs, who have been pound-wise for themselves and penny-wise for the people. What a faction has this been! What a new trait gained to the character of dishonesty, revelling by the delusion of confidence, when those who became the pilots in the storm turn into pirates over a wreck of their own making, and, clinging on to the last, surviving all they had taken in charge, are half cocked with a surfeit of plundering the sunk before their own noses are under water!—[Cobbett's Magazine.]

*National Education in France.*—The Bill regulating Primary Instructions in France, termed the *Projet de Loi*, introduced to the Chamber of Deputies by M. Guizot on the 2d of January last, and passed into a law on the 28th of June, provides for the establishment of schools of three descriptions. Every commune or parish is bound to provide, either by itself or conjointly with one or more neighboring parishes, one primary school of the lowest order. In this school moral and religious instruction is to be given to the children, reading, writing, the principles of the French language, ciphering, and an acquaintance with the authorized system of weights and measures are to be taught. The master of this establishment is to be furnished by the parish with a suitable house and fixed salary, the minimum of which is to be 200 francs, 8*l.* 6*s.* 6*d.*, and in addition he is to receive from such of the parents of the children as can afford it, fees or quarter pence. The fees are to be exacted, not by the master himself, but by a public officer on his account. County towns and parishes having a population exceeding 6,000 souls, are bound, individually or conjointly, to maintain a school of the second class, in which, in addition to the instruction given in the first or lower order of schools, the children are taught the elements of geometry, with its ordinary applications, particularly to linear drawing and land measuring; the elements of the physical sciences and of natural history, as they are applicable to the common uses of life; singing; the elements of history and geography, and especially the history and geography of France.—The wishes of the fathers must, however, be consulted and complied with as to their children's participation in the religious instruction given. As this second class of schools are designed for the children of parents above want, there is no gratuitous admission except in the case of extraordinary talents in the poor scholar of the lower species, who receives the advantage of a higher education as a reward; but, in order that the rate of payment may be very moderate, the master is to receive a fixed salary, of which the minimum is 400 francs, (16*l.* 13*s.*) along with the fees. In this class of schools, as well as the former, the fixed salary of the master is to be paid wholly by the parish, if possible, or, if not, partly by the department or county, and the state itself is to come in aid as a *dernier resort*. The third class of schools, styled the *Normal*, are for the training of masters, and of these there is to be one in every department.

*New Gigantic Telescope.*—A great work has just been completed in all its essential parts, in Urzscheider's manufactory of optical instruments at Munich. It is a gigantic telescope, on Frauenhofer's principle, of 15 Paris feet focal distance, and an aperture of 10 1-2 inches. It surpasses in size and power the largest telescopes made in the lifetime of the illustrious Frauenhofer. It has been tried with the greatest strictness by the professors of astronomy in the University of Munich, and declared to be a perfect masterpiece. The clearness and distinctness of a heavenly body seen through it, is, to that of the Dorpat telescope made by Frauenhofer, of thirteen feet focal distance and nine inches aperture, as 21 to 18, and the intensity of the light as 136 to 100. It magnifies far above 1000 times, and the ordinary expression of bringing an object nearer may be literally applied: thus, when Saturn at is smallest distance from the earth, is 165,000.000 of geographical miles distant, it seems, when magnified 816 times by this telescope, to have approached to the distance of 192,000 geographical miles; and the moon, at her smallest distance from the earth, seems, when magnified in the same manner, to have approached within 68 geographical miles, which is but little more than the distance, in a direct line, from Athens to Constantinople.

The number of State Pensioners in France, on January 1, 1833, was 162,175, who are thus divided: peers, 128, receiving 1,564,000 francs; civil pensioners, 2593; receiving 1,733,400 fr.; pensioners of July, 1408, receiving 613,700 fr.; military pensioners, 127,011, receiving 46,603,221 fr.; ecclesiastical pensioners, 28,186, receiving 4,662,469 fr.; *donataires*, 2,952, receiving 1,480,084 fr. Total, 162,175 pensioners, receiving 56,735,874 fr.

MAXIM.—When you have made a good bargain be sure you clench it with a deposite before the other party has time to retract. Often when a man may be bargaining with you in jest, if the advantage be on your side, you may pretend you thought him in earnest; and so sometimes, make a very good piece of business of it. It will not only be of good to you, but it will benefit him by teaching him never to jest about business. I will tell you a story:—A man that I am very well acquainted with, and who was not always so well to do in the world as he is now—I do not say it was myself, but it was a Scotsman who had risen from a very low beginning. His outward dress did not always tally with the lining of his pocket; indeed, the pocket when he went to market was but ill held up by the rags which it was sewed to; to look at him you would not have thought him worth a plack. Well, one morning, a cargo of hides coming into port, he went and asked the owner what he would sell his whole cargo for?—Looking at him from head to foot, the owner could

hardly refrain from laughing outright. "My good friend," said he, "I think it matters little to you the price of the cargo: a single hide, I should imagine, would exhaust your whole purse." "When folk come to buy," said our Scotsman, "they expect to be treated with civility. Will you answer me a plain question? What's the price of the whole cargo of hides on board your ship Prosperity, now in harbor?" The shipowner still thought the man was daft or joking, and he said, "What will you give me for the cargo, ready money down upon the table?" "Gude sir, it's not for me to put a price upon your goods; tell me what is the lowest price you'll take?" The owner still carrying on the joke, (as he thought,) named a price not half the actual value. The merchant, of frugal appearance, put his hand in his posket, took out a shilling, and clapped it into the hands of the owner, crying aloud, "A bargain! my friend, and before these witnesses," turning to those who had been amused with the conversation that had passed. Viewing the man still in the same light, and never suspecting that he had to do with a man of money, the considerate owner proffered back the shilling to the man of rags, saying, "Here my good man, though I have been cutting some severe jokes upon him, I would not wish to rob you of a shilling; judging from appearances you have very few to spare." The buyer advanced with a firm step, and looking him in the face, said, "Sir, judging frae appearances, it may be so; but I can tell you I did na gie ye that shilling that it might be returned in the character of an almshouse: that shilling is the arles o' my purchase of the whole of your cargo; tell me, therefore, when you will deliver it, and receive your money! or, said, he (taking out of his pouch the foot of an old stocking, well darned and patched, heavy with gold and crumpled with bank notes, "if any substantial person will be responsible for the delivery, I'll pay ye the siller down on the table this minute." Every attempt at explanation or accommodation was in vain; and at last the owner was compelled to give up his cargo of hides at less than half their value; and he received the money agreed upon forthwith. As it was the only cargo that had arrived in the market for some time, the ragged man of money sold his hides at almost his own demand; and he aye said it was the best bargain he ever made in his life. A ragged coat, ye see, has its advantages as well as a good one; but mind, never joke about business.—[Glasgow Courier.]

## SUMMARY.

*Extract of a letter from a gentleman at Prairie du Chien, Upper Mississippi, Feb. 1.*

I wrote to —— from Mineral Point, since which I have heard that the Sacs and Foxes have killed 16 Winnebagoes, and my friend and gossip Whirling Thunder is about to come down upon the Black Hawk people with 700 warriors at his back. He swears he will exterminate Black Hawk's band. The fighting, if any takes place, will be far in the rear of me I may see some of the fun, however, when I return.

[*From the Philadelphia papers of yesterday morning.*]

Delaware Disaster—Loss of Life.—The most serious disaster that has ever occurred on the Delaware, took place yesterday afternoon. The steamboat William Penn, Capt. Jeffries, on her way from New Castle to this city, took fire just before she reached the Point House, and was run ashore immediately above the Point. There were upwards of one hundred and fifty passengers on board at the time, and the awful scene that ensued can be better imagined than described. It is impossible to state at this time the number of persons who perished, as there are various contradictory rumours in circulation. Three dead bodies, two male and one female, reached this city last evening. Every exertion was made to restore life, but in vain. The names of the sufferers are, Colonel Joseph S. Porter, of this city—the Rev. John Mitchell Moore, of Lewistown, Del, and an unknown female. It is stated that the latter sprang into the water from the stern of the boat, and Mr. Moore immediately after her—that when taken up, both were alive, but they died from fright, suffering, and cold. One indivdual, a passenger, stated to us that he observed another female spring into the water and sink before assistance could be rendered.

The conduct of the officers of the boat, from the moment the accident occurred, is represented to have been of the most praiseworthy character. The place where the boat grounded is within about fifty yards of the Banks of the Delaware, on the Pennsylvania side, and the passengers, male and female, were compelled to wade some distance in mud and water, to the depth of several feet. Of course they were wet to the skin, and their cloths disfigured with mud. Several lost their hats, others their shoes, &c. Most of the baggage was saved, also the Southern Mail.

As soon as the fire was discovered, a number of small boats hastened to the assistance of the sufferers—also, the South street steamboat, one of the Market street boats, and the Burlington from Chesnut street wharf. The passengers, for the most part, were brought up in these vessels. Thousands of our citizens lined the wharves from the moment the fire was discovered, untill long after nightfall.—Great anxiety was felt by those who expected friends and relatives, and hundreds of persons rushed to catch a glance at the dead bodies, fearful that some one dear to them had passed into the valley of death.—The fire is said to have originated in the wheel. house. When first discovered, an effort was made to check it, but it was soon found impossible, and to escape from the devouring element became the object of all.

The boat cantinued burning for several hours, and presented a beautiful but a melancholy spectacle. About half past six o'clock she floated from the shore, and came up the river, still burning, as far as the Island opposite the city, where she again went ashore, and was burnt to the water's edge. We regret to learn that the loss sustained will be about $70,000.

Such are the leading particulars of this melancholy catastrophe, the first accident accompanied with loss of lives that has occurred on the Delaware since the introduction of steamboat navigation.

The Steamboat William Penn.—Another of the passengers in this boat has perished, Mr. *Walter W. Buckley*, of Connecticut. He died from the effects of cold and exposure.

The body of the female has not yet been recognized. A ring upon her finger has the following words: "Let love abide forever. J. B."

Further search has led to the conclusion, that two large portmanteaus, containing the letters from Baltimore city and the west, embracing as is supposed, Cincinnati, Ohio State (south) Illinois, Indiana, Kentucky, West Tennessee, Maryland Western Shore, and Washington, Brownsville, Union Town, and New Geneva, Pa. and for distribution, have been entirely consumed.

A newly discovered vegetable, called the Oxalis Crenata, a rival to the potato, has lately been imported from Chili and cultivated with great success in Suffolk (England.) The flavor of the root is decidedly superior to that of the common potato, and it is equally prolific.

The steamboat Wm. Gibbons, which left New York on Saturday, at 4 P. M. was seen on Monday, at 6 A. M. 40 miles north of Hatteras—wind fresh from the northward.

*More and More.*—The New Orleans Bee of Feb. 17th, announces the arrival of the schr. Creole from Tampico, with about FOUR HUNDRED THOUSAND DOLLARS IN SPECIE.

A curious blunder occurred in the business of the Common Council on Wednesday evening. Isaac Auld, was appointed weigh-master vice Albert Cox *deceased*, and yet Mr. Cox is in good health, and one of the most extensive weighers in this city.

It is stated that the Fire Insurance Offices in this City have decided not to insure any steamboat unless provided with a force pump or engine and hose, sufficient to throw water to any part of the boat, if on fire. Such means of protection, if on board the William Penn, might have saved the destruction of the boat and lives of those who perished.

*Disaster.*—The packet ship Mississippi, Captain Robinson, from New Orleans, for this port, went ashore on Wednesday afternoon, at six o'clock, in a thick fog, on Brigantile Shoals, twenty miles south of Barnegat knocked off her false keel and thumped considerably. She has on board a full cargo and $100,000 in specie for the United States Bank. The M. is a new and superb ship. She is insured in Boston, and the cargo in New York. The passengers left her soon after she struck in a schooner which was passing, and arrived in the city yesterday afternoon. A steamboat was immediately despatched and several lighters in the hope of saving the cargo, and if possible the ship.

Appointments by the President.

*By and with the advice and consent of the Senate.*

David Hodge, Register of the Land Office at Steubenville, Ohio.

James C. Sloo, Register of the Land Office at Shawneestown, Illinois.

Charles Prentiss, Register of the Land Office at Vandalia, Illinois.

William L. May, Register of the Land Office at Springfield, Illinois.

Robert S. Garnett, Collector and Inspector at Tappahannock, Va.

Henry S. Whitely, Collector and Inspector at Wilmington, Del.

John W. Smith, Surveyor and Inspector at Portland, Maine.

Levi Fagan, Collector and Inspector at Plymouth, N. C.

Archibald W. Hyde, Collector and Inspector at Alburg, Vt.

William Beach, Collector at Gloucester, Mass.

Mahlon D. Canfield, Collector and Inspector at Great Egg Harbor, N. J.

Martin T. Morton, Collector and Inspector at Nantucket, Mass.

The above are all re-appointments.—[Globe.]

Edward Livingston, to be Envoy Extraordinary and Minister Plenipotentiary to the Court of His Majesty the King of the French.

Thomas Pennant Barton, to be Secretary of the Legation of the United States at Paris.

Arthur Middleton, Jr. to be Secretary of the Legation of the United States at Madrid, in the place of Charles S. Walsh, removed.

Joseph S. Cabot, to be Commissioner under the law to carry into effect the Convention between the United States and His Majesty the King of the Two Sicilies, concluded on the 14th of October, 1832, in the place of Peter V. Daniel, resigned.

Romulus M. Saunders, to be Commissioner under the law to carry into effect the Convention between the United States and His Majesty the King of the French, concluded on the 4th of July, 1831, in the place of Thomas H. Williams, resigned.

John W. Overton, to be Clerk to the Commission under the law to carry into effect the Convention aforesaid, between the United States and His Majesty the King of the Two Sicilies, in the place of George Breathitt, deceased.

James Collinsworth, to be Attorney of the United States for the Western District of Tennessee. Re-appointed.

John Patterson, to be Marshal of the United States for the District of Ohio. Re-appointed.—[Globe.]

*Appointments by the Governor and Senate, February 26, 1834.*

Albany—William Weaver, inspector and admeasurer of wood and timber; also, measurer of stone. John W. Stilwell and Philo Booth, inspectors of beef and pork. Harmanus S. Van Ingen, Theodore Olcott, Henry Bartow, Thomas W. Olcott, Philip S. Van Ingen and Frederick H. Pepoon, notaries public.

Broome—George T. Ray, auctioneer.

Schenectady—Roswell Perry and Wm. Freeman auctioneers. Cornelius G. Palmer, Wm. Strong, Wm. Meeker, Robert Barker, Jacob Switz, Joshua D. Harman, Abraham Van Ingen, Stephen A. Daggett, James M. Bouck and Henry Fuller, commissioners of deeds.

Chenango—Walter M. Koney, notary public.

Oswego—John Reynolds, judge of county courts. Lewis Parker and I. Foot Turner, auctioneers.—Wm. F. Allen, examiner in chancery. Avery Skinner, judge of county courts.

Tioga—Silvester Sexton and Walker Canfield, inspectors of lumber.

Cayuga—Ezekiel Williams, Bradley Tuttle, Ulysses F. Doubleday, Thomas Y. How, jr. and John Garrow, inspectors of the State Prison at Auburn.

Cattaraugus—Albert C. Burge, supreme court commissioner. Moses Beecher, surrogate.

Dutchess—Robert S. Livingston, judge of county courts. David V. N. Radcliff, supreme court commissioner. James Grant, jr. and Alexander Forbus, notaries public. Joseph Gunn, Jacob Barringer, Stephen Jennings and Samuel Gunn, inspectors of beef and pork. Lemuel Conklin, inspector of flour and meal. John Lewis, James Montfort, John Ward, jr. and Henry Gale, auctioneers. John Brush, examiner in chancery.

Richmond—Jacob Tyson, first Judge; Daniel Mersereau and Samuel Barton, judges of county courts. Richard Crocheron, surrogate. Robert M. Hazard and Wm. S. Root, notaries public. Philip Gibson, Abraham Autin, Wm. Shea, and Andrew B. Decker, auctioneers.

CLAIMS ON FRANCE.—Notice has been given by the Board of Commissioners under the Convention with France, that all claimants, whose memorials are not yet filed, or are not received in consequence of some defect, must file them with the Secretary, on or before the first Monday in May next; after which period no new one will be received, unless good cause be shown why it was not previously filed.—These are required to be prepared and verified according to the former regulations of the Board, and are to be set down for examination, at the expiration of the month from the date of their reception. So much of the previous orders, as directs that no document shall be received by way of proof or otherwise after the memorial is set down for examination, is suspended until the first Monday in May, to which time the Board, on the 21st instant, voted to adjourn, with the intention of then proceeding to the examination of the several memorials.—[Daily Adv.]

MOBILE, Feb. 14.—There were no papers from the East today. We have now *eight* paper mails due from New York, and *six* from Washington.

SHIPWRECK.—The schooner Pomona from Nassau, at Savannah, on the 19th February, reports that brig Bucomiam, P. Sheffield, master, from Charleston, S. C. bound to New-Orleans was wrecked on Abaco, when only 56 hours from Charleston. All the crew and passengers, including 45 slaves, was saved. The latter on landing were liberated. The following letter is from a passenger—

"*Nassau, Feb.* 12, 1834.

"From the time we left Charleston, we had uncommon fine weather, and was under the impression that we would certainly reach New-Orleans in a week at least, but on Monday night, precisely at *twelve o'clock*, the vessel struck on *Abaco Reef*, and *filled in twenty minutes afterwards*; the masts were immediately cut away to lighten her, but all in vain; she began to thump so violently that the Captain ordered all hands to secure themselves, for he said she would not hold together another hour. Young Smith and myself lashed ourselves to the mainmast, as well as the rest of passengers, amounting in all to *sixty-nine souls*. After being in this situation a few hours, the vessel went down bow foremost, and only a few feet of her stern remained above the surface of the water. We then began to make preparations to secure our lives a little longer, for death appeared to us inevitable. In attempting to get the small boat, *which was the only one we had*, on the lee side she filled twice, and it was with the utmost difficulty she could be kept free. *Eight* of us left the wreck in her before the dawn of day, to seek for land. As soon as daylight came we discovered land, about five miles distant. It proved to be Fish Key, a small island inhabited only by a single family of fishermen. On this desolate place, we remained four days, subsisting on what we could catch, having scarcely enough to keep us alive. We were then carried by the fishermen to Green Turtle Key, where we remained a day and a night, and lastly we were brought to this place completely destitute."

MR. AUDUBON.—The following whimsical letter written by this enthusiastic bird hunter to a gentleman in Boston, is from the Transcript.

* * * When we left New York, I expected to be obliged to sail instanter for Old England. We passed through Philadelphia, working there like horses—my good wife and I—packing birds, 3500 skins, for Europe. Had to collect money due me there—and had *other trouble*. Pushed for Baltimore. Had to shave *every day*. Ran up and down both sides of the streets. Procured *four* new subscribers—collected some cash—and off to Washington city to see the Grandees. Received *grandly*. No subscribers—no cash. Heavy bill at the Hotel—Town dull—country shockingly poor. Cleared *at the Custom House*, for Baltimore again—took to the water. Had a storm. Not lost—but tremendously scared. Saw Norforlk by night, and James River by day. Reached Richmond. Pleasant reception. Made and received many calls. Handful of promises, but not a jot done for us. Crops short—produce low. Huzza for the South! Coach to Petersburg. Only *fourteen* passengers—four harps, three violoncelleos, one bass, and sundry tambourines. Have you travelled the Petersburg Rail Road? No. Well don't. Like to have been starved and roasted to boot—travelled hard, and fared harder. Coaches full—horrid brutes—eat like pigs, and swear like devils. Reached Fayetteville. Good boiled eggs—excellent substitute for stones, in this country. Got to Columbia—saw the College and President Cooper. Hired a private *carriage* to Charleston. The horse *laid down* on the road.—Hired another at *seven* dollars per diem, and *three* more for his *blades*. Rode slow—saw nothing strange, and, thank God, at last reached Charleston, and the hospitable mansion of our worthy friends, the Rev. J. B.'s family. Have worked hard ever since.—Have thought of writing to you one good hundred times, but whenever I was about to make a pen, my *brushes* stared me in the face, and not only so, but actually said to me, (for my brushes speak) "Finish those Birds of America before you write"—and so I did.

* * * My plans have been frustrated. I feel I shall have to go to England, instead of the Southern Swamps and Western Prairies. If it be determined that I go to Europe, you will see me in Boston in less than a month after you receive this. If not, I shall write to you. I have been so constant at my great *pine table*, that I have been out shooting only twice—and *once* only to dine out. Evening parties you know I abhor—unless I am *invited to dance!* My good friend has been copying my Biography for publication. * * * We are well. * * * Thank you for Smith on Fish; but I prefer Grouse to Fish—Chickens to Grouse—and Blue-winged Teal to Canvas-Back Ducks. * * * *

Yours, truly, J. J. A.

There is a degree of humor and arch satire in the annexed article—which has long been waiting a place—that few alone seem master of, now-a-days.

The fastidiousness which renders the most noble Marquess of Snowden so reluctant to be seen emerging from an *Omnibus*, under any circumstances, is not entirely without a parallel among some of our most *recherchés* personages.

LIFE IN AN OMNIBUS.—Lord Snowden has just broken a shaft of his cabriolet, on a wet day, upon Barnes Common; an omnibus rattles up, and the Tiger, no house nor aid being near, persuades his lofty master, the destined Governor General of India, to 'get in.'

'The Marquess stepped in, and the conductor gave the word, 'all right,' but this was done so soon after the admission of his Lordship into the vehicle, and he was so long picking out a clean place to sit down upon, that the jerk threw his Lordship forward into the lap of the fattest woman that ever was seen out on a caravan at a fair, who, unfortunately, was carrying a jar of pickled onions on her knee, which was upset by the Marquess's tumble, and in its fall saturated the front of his Lordship's waistcoat and stock with its fragrant juice.

'The dirty dandy in the corner, as soon as he saw the voluntary contortions of poor Lord Snowden's countenance, as the huge thing bumped up and down, and twisted first one way and then another, began to affect a similar distaste for the conveyance; and to mark his sympathy with the new arrival, forthwith bumped himself up close to him. He looked at the Governor-General Bahander for a moment or two, and then pulling out a sort of whitey-brown paper funnel, which did duty for a snuff box, offered it to the Marquess. * * *

'After a short delay, during which several aristocratic carriages rolled by—at which periods the Marquess adopted the celebrated system of *ostrichism*, and hid his head—the omnibus rattled on towards town. At Waltham-green, two tall scraggy girls from a boarding-school,

Sickly, smiling, gay, young, and awkward,

were poked in. A gentleman with very red mustachios, was picked up at the Queen's Elm gate; and a poulterer's boy, with a couple of skinned rabbits in a tray, was added to the party at the corner of Sloane-street, the said rabbits on their way back to a poulterer's in Duke-street, St. James's, because they were not fresh. * * * * *

'The Marquess made a thousand well-bred apologies, and was got up upon his legs by the exertions of the fat woman, whose struggles to rescue herself from the imposing weight of nobility, materially assisted the efforts of a good-natured dirty little man in the corner, and a thin spare woman, who was carrying a bantum-cock and three hens in a basket to London, having on her other hand a large faced child, with great blue eyes, and a cold in its head. It wore a brown skin cap, with a gold band round it, while a green and white net comforter was twisted round its chin and body; its dress, generally, bearing very strong evidence that the dear little thing was an extremely bad traveller.

'Near the door, and over whose shins the Marquess first tumbled upon getting in, was placed a stout, blue-aproned market-gardener; and opposite to him, a smartish looking man, with a Mosaic gold chain round his neck, and a bunch of oily curls coming out from his hat just over his hair—he was the dandy of the party.

'Off went the omnibus—rattle went all the windows—slap went the weather boards, bang went the axle-trees; and away went the whole concern at a rate and with a noise, of which the Marquis till that moment had but a very faint conception.

'At the top of St. James's street the caravan stopped. The day had cleared up; the pavement was dry. The King was in town; there were many people about. Lord Snowden just peeped through the windows, and saw groups collected—men he knew. *Here* it was clear he could not get out—whither should he go? how far—what place was safe? At length he resolved upon going the whole journey to to the Bank, so that he might emerge in the city, and then enveloping himself in a hackney-coach, reach the habitable part of the town, without fear of discovery.

'Any body for White Oss Cellar?' said the man on the steps. Out went the dirty dandy, the man with the apron, and the boy with the rabbits. But their places were instantly supplied by a portly gentleman lugging in a small sized green garden-engine with a fan spout, and three fishing-rods, which he had just bought at the corner of Albemarle street, and a fond mother who had provided herself with a heap of toys for her six children.

'Still the Marquess kept peering out of his prison—nobody saw him—and it was pleasant to peep through the loop-holes thus unobserved. In a few minutes all was right, but the pavement in Piccadilly was up; it was necessary, therefore, that the huge machine should go down St. James' street; and so it did; but short was its progress in that line of march—all the bumpings and thumpings which its rapid course in the earlier part of its journey had excited now were to be compensated for. The driver smacked his whip, the horses obeyed the sound; when bang went something, and in an instant the whole fabric came down with a crash like thunder, exactly in front of White's.

'The shrieks of the women, the cries of the men, the noise of the fall, all combined to attract a thousand spectators. Fifty heads were out of Crockford's Coffee-room; all the guardsmen rushed into the balcony; and in the bow-window of White's itself, which was instantly thrown up, were heard the well-known voices of the leaders of the *clique*, in a sort of war-hoop, which, like the whistle of Rhoderick Dhu, roused the whole clan to observe the dreadful *denouement*.

'In detail were the passengers extricated. The dear little boarding-school girls jumped out first: the fat man with his garden-engine, stuck in the door-way, and was only ejected by the ponderosity of the still fatter woman, with what she called her 'inion jar,' clasped like a lovely baby to her bosom; the lady with the toys was trampled under foot; the sick child was jammed under the dirty man in the corner, and the thin woman who took care of it, getting anxious about its fate, unwillingly abandoned the poultry; and when the most noble the Marquess of Snowden, K. G. and Governor General of India, emerged, amidst the cries of 'take care of the old gentleman,' he came out without his hat, with a fine bantum cock perched upon his head, and a couple of fuzzy-legged hens roosting upon his shoulders.'—[Hook's Sayings and Doings.]

### THE SPANISH ARMADA.

[*From Southey's lives of British Admirals.*]

"Meantime, though the negotiations at Ostend were still carried on in policy by the Spanish commissioners, there was on the part of the Spanish government a disdainful disregard of secrecy as to its intentions, or rather a proud manifestation of them, which, if they had been successful, might have been called magnanimous. The great king had determined upon putting forth his strength, and so confident were his subjects of success, that in the accounts which were ostentaneously published of its force, they termed it 'the most fortunate and invincible Armada.' The fleet, according to the official statement, consisted of 130 ships, having on board 19,295 soldiers, 8450 mariners, 2088 galley-slaves, and 2630 great pieces of brass; there were, moreover, twenty caravels for the service of the fleet, and ten six-oared *faluas*. The names of the most popular Romish saints and invocations appeared in the nomenclature of the ships; and holier appellations, which ought never to be thus applied, were strangely associated with the Great Griffin and the Sea Dog,

the Cat and the White Falcon. There were in the fleet 124 volunteers of noble family, having among them 456 armed servants.

There was no noble house in Spain but had a son, a brother, or a nephew in the voyage, embarked either at their own cost, or in the king's pay. The religioners who embarked for the service of the fleet, and for after operations, were 180, consisting of Augustinians, Franciscans, Dominicans, and Jesuits. Don Martin Alarcon embarked for the good of the heretics, as vicar-general of the holy inquisition; and implements of conversion of a more cogent kind than argument or persuasion are said to have been embarked in sufficient quantity. The business of reconciling England to the Romish see was committed to Cardinal Allen, as it had formerly been to Cardinal Pole, and an English translation of the pope's bull was ready for circulation as soon as a landing should be effected. The galleons, being above sixty in number, were 'exceeding great, fair, and strong, and built high above the water, like castles, easy, (says a contemporary writer,) to be fought withal, but not so easy to board as the English and the Netherland ships; their upper decks were musket proof, and beneath they were four or five feet thick, so as no bullet could pass them. Their masts were bound about with oakum, or pieces of fazeled ropes, and armed against all shot. The galleasses were goodly great vessels, furnished with chambers, chapels, towers, pulpits, and such like: they rowed like galleys, with exceeding great oars, each having 300 slaves, and were able to do much harm with their great ordnance.' In place of the Marquez de Santa Cruz, who was dead, the Duque del Medina Sidonia was general of this great armament; Don Juan Martinez de Ricalde, admiral."

The following addition will be considered very curious:

*The Invincible Armada, as it was to have been, according to the Plan of the Duke of Alva.*—The Invincible Armada with which Philip the Second designed to subdue England is sufficiently well known. His treasury was exhausted by the sums which he expended on it, and never after recovered its pristine palmy state. For the times, this armament was the largest which had ever been fitted out, for it contained no less than 130 ships of war, of which 65 were of the line, their tunnage was 57,868 tons. They carried no less than 2431* guns and mortars, 123,790 shot, 5175 hundred weight of powder, 1238 hundred weight of lead for the arquebuses (plomo para la arcabucera,) and 30,658 men, together with the necessary provision. They were accompanied by 180 priests and friars, being at the rate of one for for every 155 men. There were also on board, of biscuit 11,000 cwt., bacon 6000 cwt., and cheese 3000 cwt. This, however, was not by any means the Ivinneible Armada originally proposed by Alva, and the design of which he sketched with such a degree of accuracy, that we must honor him as a man of genius, while we condemn him as a tyrant. Whether England could have made any resistance had Philip II. been able to accomplish this plan, may reasonably be doubted:—According to Alva, the fleet was to have numbered 150 ships of the line (the real Armada consisting, as we have seen, of but 65;) their tonnage would have been 77,250 tons. In addition to these ships of the line, there were also to have sailed 446 frigates, transports, and small vessels, with the tonnage of 33,500 tons; so that the whole tonnage amounted to 110,750 tons. The crews were estimated at 30,100, whose pay for eight months was to be 500,000 piasters. The land troops were to have amounted to 55,000 men. Let us only consider the times in which this was to have taken place. Even in our own days the largest fleet scarcely lands more than 20,000 men. The expedition which was in 1820 to have subjected South America, consisted of only 15,000 men. Spain, Naples, and Germany, joined to form this formidable array. On landing, it was to have had an artillery of 130 piecs of cannon, that of the fleet numbering 4,150† pieces. The service of the land artillery was reckoned at 28,000 cannon-balls, and 2,200,800 cwt. of powder. In those times, compared with our own, the guns were fired slowly and seldom, so that the ammunition seems but slenderly provided. For the conveyance of the artillery when landed, Alva intended to ship 1400 mules; the rest of the service was to be supplied by 1200 horses.—The whole number of men on board the Armada would have amounted to 94,000. We cannot proceed farther with the items; but what we have already stated is sufficient to show the enormous scale, for the times, in which the expedition was planned. The original document containing this plan, was lately, and, we believe, for the first time, published in Spanish and German in Schepeler's *Beitragen zur Geschichte Spaniens.* He obtained it, and other ancient papers, in 1814, while serving in Spain.

* 5175 cwt. of powder is manifestly too little, while on the other hand, 2,200,800 is as plainly too much.

† 4150 pieces of cannon are far too few for 150 ships of the line, and 446 frigates; for if we reckon that each ship of the line carried at least 50 guns, they would have amounted to 7500; to which we may add 200 frigates at 20 guns each, giving 4000 more, making an aggregate of 11,500 guns.

### THE OLD MAN'S RELICS.

I have been young, and wild, and gay,
To all but beauty blind:
And sighed all night, and sung all day,
To ladies stern or kind;
I've told my tale in manly prose,
I've written it in rhyme;
And now I'm crown'd with age's snows,
The scent of yonder withered rose
Recalls that pleasant time.

O then were hopes that chased my sleep,
And fears that made me thin;
And many subtle wiles and deep
My proud one's heart to win;
And raptures past the poet's guess
To wear so sweet a chain;
And now, perforce, content with less,
A gleam from yonder golden tress
Revives it all again.

O then were feasts in lighted halls,
And vows beneath the moon,
And fairy tales and madrigals
In garden bowers at noon:
And wanderings with my ladye love
Around the haunted hill;
And now my hand can hardly move,
It needs but touch the broidered glove,
And she's beside me still.

You smile at all these simple things
I hold in treasured store;
You ask the worth of flowers and rings
When love exists no more:
I wish to morrow were my last,
If cold or careless grown,
To flame or wind I dared to cast
The precious relics of the past.
And joys for ever gone!


**SURVEYORS' INSTRUMENTS.**

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.
J31 6t

**ENGINEERING AND SURVEYING INSTRUMENTS.**

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad., Germant. and Norris. Railroad
m1 1y

**NOVELTY WORKS,**
Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

**STEPHENSON,**
*Builder of a superior style of Passenger Cars for Railroads*
No. 264 Elisabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examin these Cars; a specimen of which may be seen on that part of the New-York and Harlaem Railroad, now in operation.
J 15 tf

**RAILROAD CAR WHEELS, BOXES AND AND OTHER RAILROAD CASTINGS.**

☞ Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.
J8 ROGERS, KETCHUM & GROSVENOR.

**INSTRUMENTS.**

**SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.**

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1832.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m18

The schr. Manuelita, which was captured by the Nimbie, Br. schr. of war, and sent into Havana, was supposed to be the fastest sailing slaver out of the port, having been chased a number of times by cruizers, and escaped. She was 102 ft. 6 inches on deck, 24 9 beam, and drew 17 feet water. Crew amounted to 34. Her safety was as confidently anticipated, that a great part of her cargo (had 185 negroes when taken) were sold previous to her arrival.

*Disaster.*—The ship Montpelier, from New Orleans for this port, went ashore at Squam Beach, 15 miles north of Barnegat, on Tuesday morning, at 4 o'clock.

The Department of State has received information from the Chargé d'Affaires of the Netherlands, announcing the total disappearance of the Asiatic Cholera from that kingdom; and expressing the desire of his government, that any restrictions which may have been laid upon ships or goods coming from thence, in consequence of the prevalence of that disease, should be taken off.

*Circular to Collectors, Naval Officers and Surveyors.*

TREASURY DEPARTMENT,
*Comptroller's Office, Feb.* 18, 1834.

SIR—According to the decision of Mr. Secretary Duane, communicated in the circular from this office, dated the 12th of August, 1833, namely—that all Wines, excepting those of France, were from and after the 3d day of March, 1834, to pay one half of the duty existing at the date of the decision, and French wines were to pay half the duty to which they were subject, under the act of 14th July, 1832; all wines, whether imported before or after the 31st of December, 1833, and remaining under the control of the proper officers of the Customs, after the 4th day of March, 1834, will, in conformity with the provisions of the 3d section of the act of 2d March, 1833, entitled "An act to explain and amend the 18th section of an Act, to alter and amend the several acts imposing duties on imports, approved the 14th July, 1832," be entitled to the reduction of one half the duties respectively specified in that circular, in relation to which reduction the third section of the said Act of 2d March, 1833, contains the following directions, namely:

"If any higher duty shall have been paid, such excess shall be refunded out of any money in the Treasury not otherwise appropriated, to the person placing the same in the custody of the Customs; and any outstanding bond or bonds, which may have been given for the duties on the same shall be cancelled."

In order that there may not be any misunderstanding, however, in relation to the Wines which have been imported since the 31st December, 1833, and which may remain under the control of the proper officers of the Customs, after the 4th March, 1834, it is deemed proper to state that, in case the duties on any Wines thus imported, exceed 20 per cent on the value, they will not, besides the reduction of one half of the duties already allowed, be also entitled to a deduction of the one-tenth part of such excess.

With a view to an uniformity of practice in the execution of the laws referred to, it is deemed proper to state that the reduction is, in all cases, to be made with reference to the amount actually paid or secured on the quantity as ascertained at the time of the deposite.

In those cases in which the whole of the duties shall have been paid before 4th March next, a Certificate is to be given by the officers of the Customs to the persons who may be entitled to the same agreeably to the subjoined form mark A, which certificate is to be presented to the Treasury for payment.

But when only a moiety of the duties shall have been so paid, as such moiety will constitute the amount of duty to which the Government will be entitled, the bond for the remaining moiety is to be cancelled; and where no part of the duties shall have become due and payable before wines shall be applied for to be withdrawn from the Custom House stores after the 4th March next, you are to take bonds with sureties to your satisfaction (provided the party has no bond due and unsatisfied) payable in three and six months after date of importation, calculating the duties at the rates which will be in force after that day.

It is deemed proper to add that a certificate agreeably to form A, is in no case to be issued to the party claiming it, if any debt he may owe to the Government be due and unsatisfied at the time.

All such cases are to be reported to the Department, and thereupon special instruction in relation to them will be given.

In the views thus communicated, the Secretary of the Treasury concurs. Respectfully,

Signed, JOS. ANDERSON, Comptroller.

BANK OF THE UNITED STATES,
*March* 5, 1834.

At a meeting of the Board of Directors held this day, Mr. Eyre, from the Committee on the Offices, presented the following report, which was read.

REPORT.

The Committee on the Offices having now ascertained by an experience of several months, the progress in the reductions in the business of the Bank, ordered by the Bank on the 8th of October last, avail themselves of the monthly returns from the Bank and all its offices, made up for the month of March, to present a statement of those reductions.

The design of the Board in directing them, was to protect the institution, and to provide the means of paying the Deposites of the Government, so as to press with as little injury as possible on the community. How far that purpose has been accomplished, will be seen from the following statement of the amount of loans, deposites, specie, and circulation of the Bank; from the 1st of October, 1833, to the 1st of March, 1834.

| | Discounts. | Dom. Bills. | Total. | Pub. Deposites. | Pri. Deposites. | Total. | Specie. | Circulation. |
|---|---|---|---|---|---|---|---|---|
| 1833—Oct. 1. | 42,936,575 42 | 17,867,927 51 | 60,094,302 93 | 9,898,435 58 | 8,008,862 78 | 17,877,298 36 | 10,663,441 51 | 19,128,189 57 |
| —Nov. 1. | 41,062,813 94 | 16,147,790 44 | 57,210,604 38 | 8,239,311 18 | 7,985,041 88 | 15,512,353 06 | 10,342,160 46 | 18,518,000 57 |
| —Dec. 1. | 38,790,567 49 | 15,679,537 18 | 54,453,104 67 | 5,163,966 63 | 6,827,173 10 | 11,989,433 73 | 9,818,539 25 | 18,650,912 90 |
| 1834—Jan. 1. | 38,600,069 46 | 16,303,392 94 | 54,911,461 70 | 4,230,509 63 | 6,734,866 06 | 10,965,375 69 | 10,031,327 75 | 18,598,397 90 |
| —Feb. 1. | 37,544,939 93 | 17,298,730 69 | 54,843,973 74 | 3,166,561 73 | 6,715,313 60 | 9,781,874 33 | 10,523,385 69 | 19,360,472 90 |
| —Mar. 1. | 37,381,131 36 | 18,786,698 | 56,167,829 | 2,604,323 62 | 7,343,159 92 | 9,947,483 54 | 10,385,439 15 | 18,823,189 |

From this statement it will be perceived, that from the 1st of October to the 1st of March, the total reduction in the line of local discounts, was..... $4,545,143 56

While there has been an increase in the Domestic Bills of..... 916,770 49

Making the total reduction of Loans..... 3,998,373 07

During the same period, the reduction of the Public Deposites was..... 1,990,934 82

And of the Private Deposites..... 665,738 86

Making a total reduction of Deposites..... 2,656,673 68

During the same time, the specie of the Bank has diminished..... 7,564,901 96

And the circulation of the Bank..... 1,999,934 82

The comparison of the two periods will be more obvious, from the following tabular statement:

| | Loans. | Deposites. | Circulation. | Specie. |
|---|---|---|---|---|
| October 1, 1833..... | 60,094,302 93 | 17,877,298 36 | 19,128,189 57 | |
| March 1, 1834..... | 56,167,929 86 | 9,947,483 54 | 13,823,189 | |
| | 3,926,373 07 | 7,929,934 82 | 605,000 57 | 7,564,901 96 |
| | | | | 10,663,441 51 |
| | | | | 10,385,439 15 |
| | | | | 278,002 36 |
| | | | | 278,002 36 |
| | | | | 605,000 57 |

The general result of the operations of the Bank during the last five months, have been,

1st, That the reduction of the loans has not been by upwards of four millions of dollars as great as the reduction of the deposites—and

2d, That the withdrawal of nearly eight millions of dollars, of those funds on which the Bank had based its accommodations to the community, has not yet been followed by a reduction of accommodations equal to one half of the amount of funds thus withdrawn.

3d, That from the 1st of January to the 1st of March, the increase in the line of domestic bills amounted to nearly two millions and a half of dollars.

4th, That during the same period there has been an actual increase in the total loans of the Bank of $1,256,368 16.

The Committee cannot regret the smallness of this reduction during the last five months, not even the actual increase of its loans since the first of January; because both have arisen from the strong desire of the Bank to give every relief to the community consistent with its own safety. But they cannot forbear to express their deliberate conviction, that these reductions are much less than are required for its security during the present unsettled state of the currency, and that it has now become the duty of the Bank, gently, but steadily to diminish the amount of the claims upon it, by continuing to lessen its business.

Whereupon, on motion of Mr. Newkirk, the following resolution was unanimously adopted:

Resolved, that as much misapprehension appears to exist throughout the country, in regard to the reduction of the loans of the Bank since the removal of the epublic deposits, the foregoing report, be published for general information.

Extract from the minutes.

S. JAUDON, Cashier.

*List of Subscribers to the Railroad Journal who have paid in advance to Jan.* 1, 1835, *—continued from February* 22, 1834.

R. L. Livingston, Clermont, N. Y.
S. Fitch, Mystic, Ky.
J. M. Porter, Easton, Pa.
W. Cowdry, New Hamburgh, Dutchess co. N.Y.
A. Barrett, Hamilton, N. Y.
W. J. M'Alpine, Hamilton, N. Y.
John Haggins, Billerica, Mass.
Thos. F. Purcell, Williamsport, Md.
Peter Stewart, Amsterdam, N. Y.
A. B. Warford, Columbia, Pa.
O. R. Van Benthuysen, Albany, N. Y.
James Tolfree, Ithaca, N. Y.
James Stewart, Williamstown, Pa.
J. Dana Allen, Clinton, N. Y.
Joseph Lomas, Newburgh, N. Y.
Alexander Twining, West Point, N. Y.
J. Richardson, Wilmington, Del.
S. S. Durfee, Hudson, N. Y.
D. Crawford, Newburgh, N. Y.

☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope,* having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, January 29, 1833.

**RAILWAY IRON.**

☞ Ninety-five tons of 1 inch by ¼ inch, 200 do. 1½ do. ¼ do., 40 do. 1¾ do. ¼ do., 800 do. 2 do. ¼ do., 800 do. 2½ do. ¼ do. soon expected. *Flat Bars* in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2¼, 2⅜, 2½, 3, 3¼, 3½, and 3¾ inches diameter for RailwayCars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d71meowr

**LOCOMOTIVE ENGINES.**

☞ THE AMERICAN STEAM CARRIAGECOMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1-2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

☞ The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,
WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 40, page 772 of this Journal. 46